OPERATOR
MANUAL
350518 Rev.H

Castle

7662

INDEXING WASHER

OPERATOR'S MANUAL 350518 (3/16/94)
Rev.E (1/1/97) General Revision: Getinge/Castle
Rev.F (2/28/97) Touch Screen displays
Rev.G (6/2/97) Touch Screen displays
Rev.H (3/13/00) Touch Screen displays; max. load 40 lb.

DESCRIPTION OF SYMBOLS & NOTES IN MANUAL

The following symbols with related notes appear in this manual.

"Warning" notes alert the user to the possibility of personal injury.

"Caution" notes alert the user to the possibility of damage to the equipment.

"Note" alerts the user to pertinent facts and conditions.

FILE CREATED: 3/2000
Information contained herein is applicable to units manufactured between 5/98 and 3/2000. Previous/future units may vary.

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IMPORTANT

SPECIAL SAFETY INSTRUCTIONS THAT FOLLOW APPEAR WITHIN THE MANUAL. READ THEM CAREFULLY BEFORE OPERATING THE UNIT, AND FOLLOW INSTRUCTIONS.

"Warning" notes alert the user to a possibility of personal injury.

GENERAL CONFIGURATION *(p.1-2)*

Do not open a side access door during Washer operation. To do so could release hot water or forced hot air and result in burns to the skin.

N'ouvrez pas une porte latérale pendant que le lave-chariot est en fonctionnement. L'ouverture de la porte aurait pour effet d'exposer le personnel a l'eau chaude ou â l'air chaud soufflé ce qui presenté des risques de brülures pour la peau.

OPERATING INSTRUCTIONS *(p.3-1)*

Avoid burns. Racks, baskets, etc. indexed out of the Drying Station will be hot! Allow to cool, or wear heat-resistant gloves before handling.

Évitez les brûlures. Les supports, paniers, etc... sortant de la Station de Séchage seront très chauds! Allouer un temps de refroidissement ou porter des gants résistant à la chaleur avant la manipulation.

OPERATING INSTRUCTIONS *(p.3-5)*

Operating personnel should avoid any attempt to clear the following two types of obstruction: DOOR CLOSED OBSTRUCTION and ELEVATOR DOWN OBSTRUCTION. In either condition the weight of the component could cause crushing injuries to body parts.

Le personnel utilisateur ne devrait pas tenter d'enlever les deux d’obstructions suivantes: OBSTRUCTION/PORTE FERMÉE et OBSTRUCTION/ÉLÉVATEUR ABAISSÉ. Pour chacune de ces conditions, le poids des composantes impliquées pourrait causer des blessures graves.

GENERAL DESCRIPTION

INTRODUCTION

The Castle 7662 Indexing Washer is designed to clean utensils and other items at a maximum rate of productivity coupled with a minimal expenditure of manual labor.

The sequential movement, or indexing, of ware into compartments dedicated to specific treatments permits the processing of as many as five loads at one time.

A programmable controller enables the automatic mixing of two processing cycles: Utensil and Ultrasonic. Utensil loads receive Prewash, Wash, Tap Water Rinse, Purified Water Rinse, and Drying treatments. Ultrasonic loads receive Prewash, Ultrasonic cleaning, Wash, Tap Water Rinse, Purified Water Rinse with Lubrication, and Drying treatments. As an option, an enzyme supplemented Prewash treatment may be provided for both cycles.

The Control Panel provides the operator with a touch screen interface that enables the selection of seven timing values and four temperature setpoints for various cycle phases. Once selected, a value applies commonly to both Utensil and Ultrasonic cycles.

A two-rack load Station precedes the Prewash compartment, and an automatic unload Station follows the Drying compartment. From the unload Station, processed racks may be moved onto a distribution conveyor or an accumulation roller table.

The Washer will accept standard rack loads 21-1/4" x 22-1/4" x 4" high for ultrasonic processing, and standard rack loads 20" x 20" x 15" high for utensil processing.

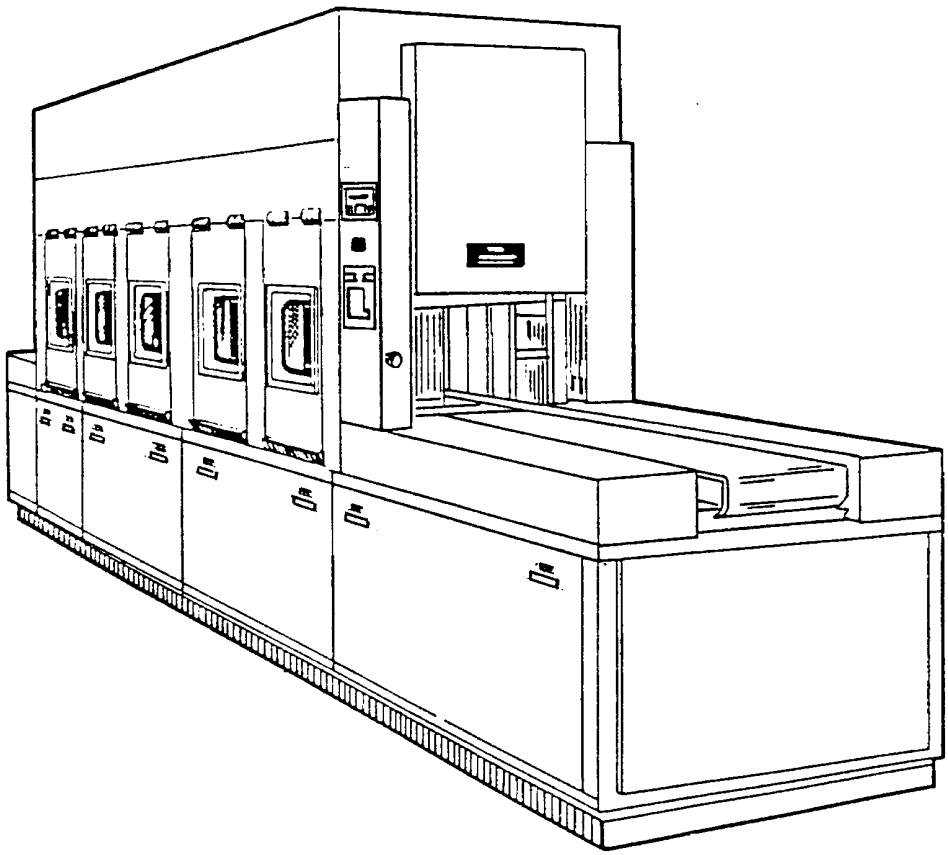


FIGURE 1-1: CASTLE 7662 INDEXING WASHER

GENERAL CONFIGURATION

- Overall dimensions: 8'-5/8"H x 3'-6"W x 20'-0"L.

- The Washer is equipped with six guillotine type doors. The doors raise simultaneously to permit the automatic indexing of racks from Station to Station at the completion of processing treatments. They then close automatically to isolate the five processing Stations from each other prior to the start of treatments.

  Processing will not begin until all doors are closed.

  The Washer's negative exhaust system functions when doors are open to prevent aerosols that have been generated within the processing Stations from entering the work rooms.

  Doors will open only for the indexing of the conveyor system. They will all remain closed when the Washer is processing loads, or during periods of inactivity.

- Each processing Station is equipped with a side access door that can be completely removed for access to a Station during periods when the Washer is idle. The approximate weight of a side access door is 18 lb. (40 kg).

  The side access door for the Ultrasonic Station is equipped with a safety stop switch. If this door is open, the washer will not start. If this door is opened during operation, the washer will stop.

Do not open a side access door during Washer operation. To do so could release hot water or forced hot air and result in burns to the skin.

A wire mesh Elevator Guard is located behind the side access door for the Ultrasonic Station. To remove Guard for maintenance purposes:

1. *Grasp the Guard by its handle and slide it straight up until it comes free at the bottom.*

2. *Lower the Guard to free the top.*

3. *Turn it slightly on the diagonal and ease it out through the door opening.*

- The Washer is installed in the Decontamination Room. However, the Unload Station will end at, or project through, a wall opening to permit the automatic unloading of processed racks directly into an adjoining Clean/Packaging Room. Such an opening would be sealed with a barrier flange.

Load Station
Holds the loaded racks that await processing.

Two racks (or one) may be placed on the Station's conveyor. When the START Push Button is pressed to begin Washer operation, or when the phase treatments for an ongoing operation have concluded, the guillotine doors open automatically and the first rack is indexed (moved) into the Prewash Station. At the same time, the second rack is indexed to the position that was occupied by the first rack. The next loaded rack may then be placed in the position vacated by the second rack - or the position may be left empty.

Prewash Station
Subjects all loads to a cold water spray to remove gross soil. The duration of this phase is selectable at the control panel. A Drain Count is also selectable (This is the number of processing treatments that are carried out before the used water is automatically drained from the Prewash reservoir tank.).

Treatment water is delivered by means of spinning manifolds located at the top and bottom of the Station. It is recirculated from a supply that is maintained in a reservoir tank located below the Station.

The injection of an enzyme or detergent additive solution into the water supply may be included as an option.

Ultrasonic Station
Subjects loads to ultrasonic cleaning, if desired. Whether or not a load receives ultrasonic processing depends on the height of the rack into which the operator places the load. Items placed in racks that are less than 11 inches in height will receive ultrasonic processing. Items placed in racks that have a structural height of 11 inches or more will not receive ultrasonic processing.

A sensor, located in front of the door that separates the Load and Prewash Stations, detects racks that are 11 inches or more in height. Undetected racks receive ultrasonic processing, while detected racks do not.

An undetected rack that is indexed into the Ultrasonic Station, is lowered, by means of an elevator system, into an immersion tank for cleaning. After cleaning, the rack is automatically raised out of the tank. It is then indexed into the Wash Station. A detected rack that is indexed into the Ultrasonic Station remains elevated and untreated. When indexing next occurs, the load is moved into the Wash Station.

The duration of this phase is selectable at the control panel. A Drain Count for the ultrasonic immersion tank is also selectable (See previous explanation of a drain count provided in Prewash Station.).

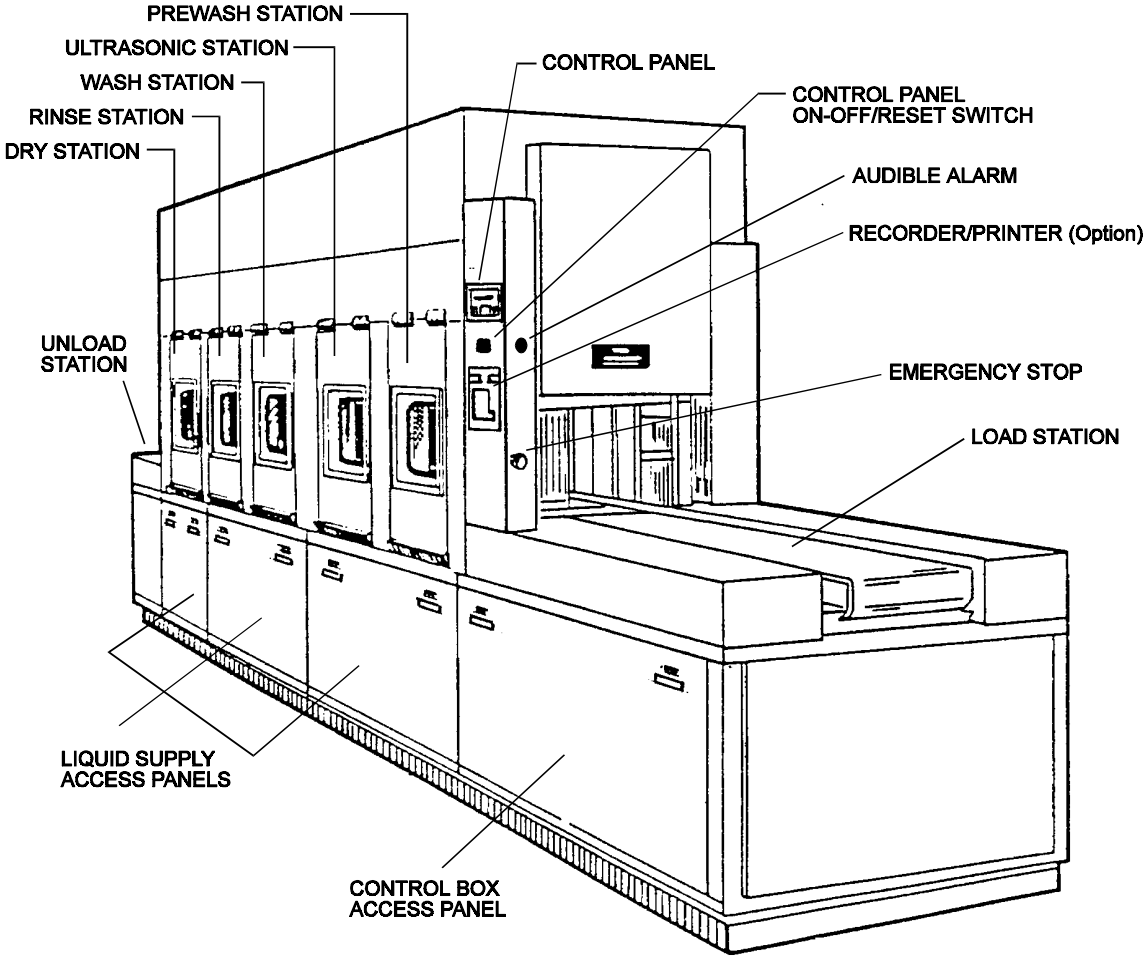


FIGURE 1-2: GENERAL CONFIGURATION

Wash Station
Subjects all loads to a jet spray treatment of heated detergent wash water. The duration of this treatment and the temperature of the wash water are selectable at the control panel. A Drain Count for the detergent water reservoir tank is also selectable (See previous explanation of a drain count provided in Prewash Station.)

The treatment is delivered through two reciprocating (back and forth movement) spray manifolds that completely surround a loaded rack.

Detergent wash water is recirculated from a steam heated supply that is maintained in a reservoir tank located below the Station.

Rinse Station
Subjects all loads to a recirculated, heated tap water rinse (RINSE), followed by a non-recirculated, heated purified water rinse (PURE RINSE). Ultrasonic loads receive lubricant added to the purified water; utensil loads do not. (Purified water may be distilled, deionized, or reverse osmosis.)

The duration and temperatures of both treatments are selectable at the control panel.

Treatments (RINSE & PURE RINSE) are delivered through separate pairs of jet spray, reciprocating manifolds that completely surround the load. RINSE water is recirculated from a steam heated supply that is maintained in a reservoir tank adjoining the wash water reservoir. PURE RINSE water is pumped from a steam heated reservoir supply located under the Dry Station. PURE RINSE water expended at the spray manifold is directed to the RINSE reservoir tank for the purpose of refreshening that supply.

The RINSE reservoir is generally drained only at the conclusion of daily operation.

The purified water supply maintained in the PURE RINSE reservoir is held indefinitely, but may be drained by turning a manual drain valve located at the base of the reservoir.

Dry Station
Subjects all loads to a period of recirculated, forced hot air dying. The duration of this treatment and the drying temperature are selectable at the control panel.

Unload Station
Receives the processed load that has been indexed out of the Dry Station.

A load will remain on the Unload Station until it is either removed by hand, or it is indexed onto a distribution conveyor or accumulation table - an action that will occur following completion of the next processing cycle.

Control Power ON-OFF/RESET Switch
Activates and deactivates the washer controls. A green light will illuminate the switch when it is in the ON position.

Control Panel
Provides a touch screen interface with the washer's programmable controller located in the control box. Enables the operator to select, program, and monitor processing cycles.

Printer (Option)
See OPTIONS, page 1-5.

Audible Alarm
Sounds to alert personnel. For Example: In the event an abort condition occurs.

Emergency Stop
Stops Washer operation when pushed in. Switch will remain in the depressed position, keeping the Washer inoperative, until released at the insertion and turn of a key.

There is one Emergency Stop Switch located at each end of the unit.

Control Box Access Panel
Permits access to the Washer's Control Box (Service personnel only.).

Liquid Supply Access Panels
Permit access to the supply containers for the various liquid supply dispensing systems. Refer to Appendix A: Liquid Supply Dispensing Systems.

OPTIONS

This Washer may be equipped with either one, or both of the following selected options:

Recorder/Printer

Issues a printed record of all pertinent cycle data, including treatment functions, temperature, time and date. A take-up Reel is provided to retrieve and rewind the printout onto a spool. See also: Appendix: B Recorder/Printer.

Enzyme Dispenser

Automatically injects an enzyme solution into the water supply used in the Prewash processing treatment. See also: Appendix A: Liquid Supply Dispensing Systems.

Accessories

Figures 1-3 and 1-4 below are two examples of racks available from the manufacturer. For more information on the complete line of accessories for this Washer, contact your Getinge/Castle Representative.

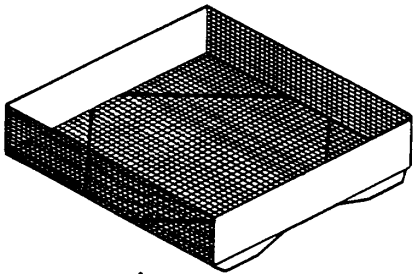


FIGURE 1-3: TRAY PROCESSING RACK
Holds two hinged-items trays for processing.

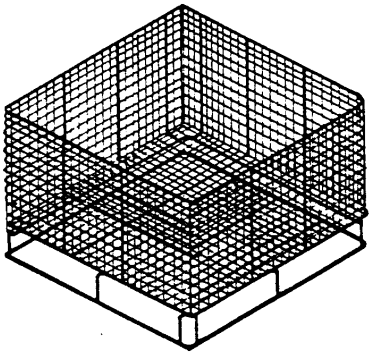


FIGURE 1-4: GENERAL PURPOSE RACK
Holds miscellaneous cups, bowls, etc.

PROCESSING CYCLE DESCRIPTION

This Washer will handle a single rack or an unlimited string of racks once the unit's processing cycle has been activated (by pressing the START Push Button at the Control Panel).

To demonstrate this processing cycle, a string of five mixed loads (Utensil and Hinged Items) will be shown in the following illustrations as they are automatically indexed through the various process treatments.

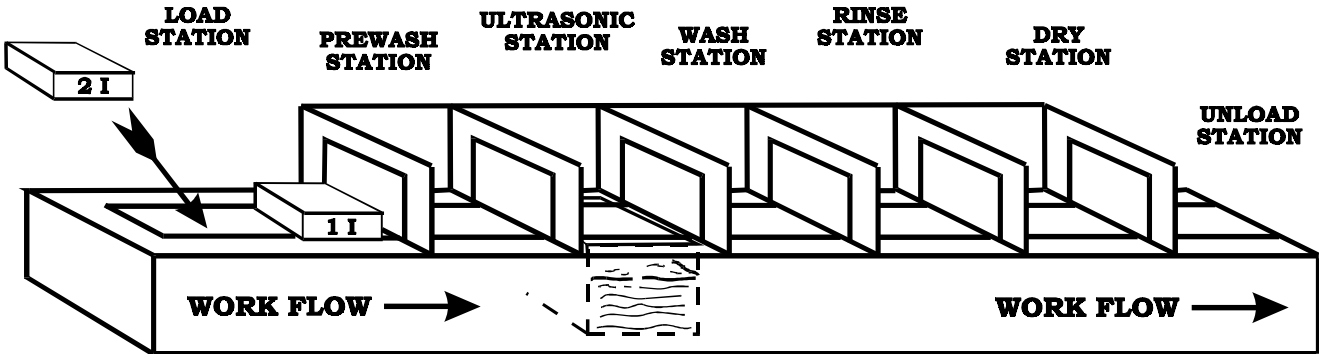
The order in which the racks are to be processed is as follows:

Hinged Items Rack (1I)
Hinged Items Rack (2I)
Utensil Rack (3U)
Hinged Items Rack (4I)
Utensil Rack (5U)

The time and temperature settings for the various treatments are as follows:

TREATMENT	TIME	TEMPERATURE
Prewash	90 seconds	Ambient
Hinged Items	240 seconds	120ºF
Wash	240 seconds	150ºF
Rinse	180 seconds	180ºF
Pure Rinse	30 seconds	180ºF
Dry	240 seconds	240ºF

A

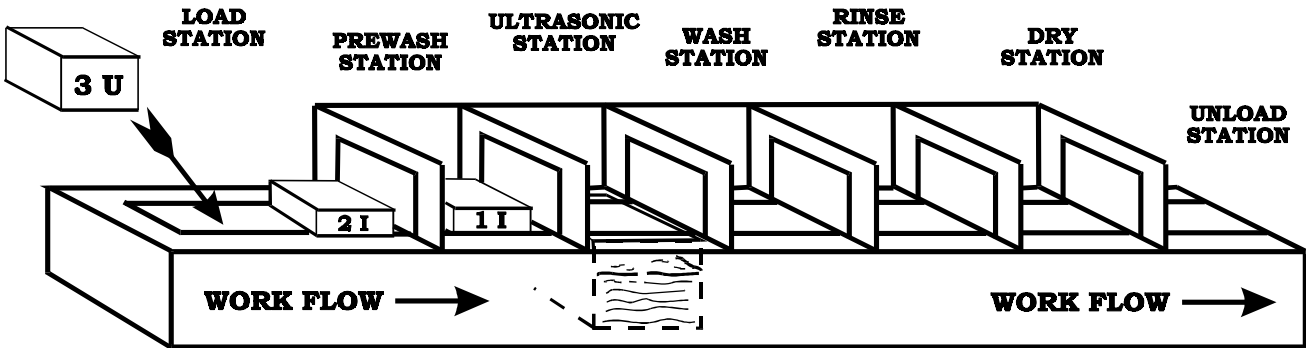


Hinged Items racks 1I and 2I are positioned on the Load Station.

START Push Button is pressed to begin processing.

Exhausting (untimed) starts. All doors open.

B



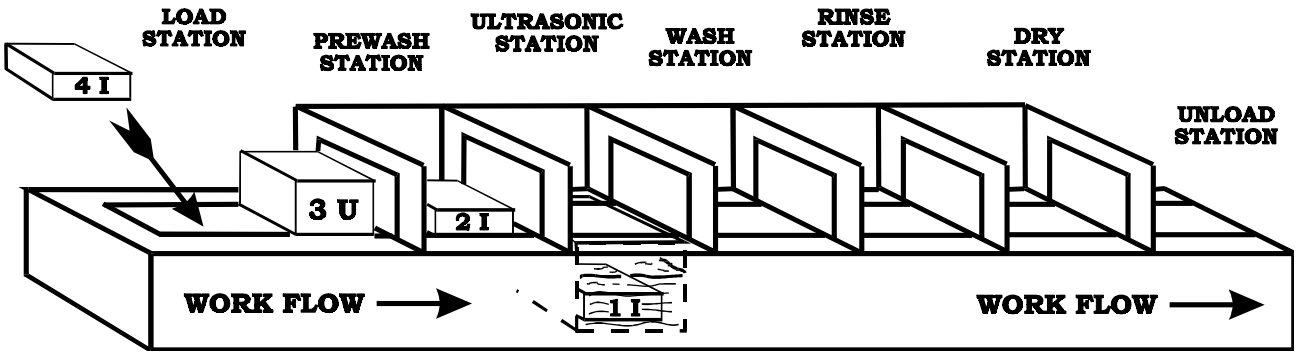
Hinged Items rack 1I is indexed into the Prewash Station.
Hinged Items rack 2I is indexed to the forward load position.
Utensil rack 3U is placed on the rearward load position.

All doors close. Exhausting ends.

The Prewash treatment begins for the programmed time of 90 seconds (Enzyme or detergent additive solution is continuously injected into the water supply if the unit is equipped for that option.). All the other treatment Stations remain idle (Spray manifolds in the Wash and Rinse Stations will travel back and forth but will not discharge.).

Prewash treatment ends. Exhaust (timed) starts - ends. Exhausting (untimed) starts. All doors Open.

C



Hinged Items rack 1l is indexed into the Hinged Items Station.
Hinged Items rack 2l is indexed into the Prewash Station.
Utensil rack 3U is indexed to the forward load position.
Hinged Items rack 4l is placed on the rearward load position.

All doors close. Exhausting ends. Hinged Items rack 1l is lowered into the Hinged Items immersion tank.

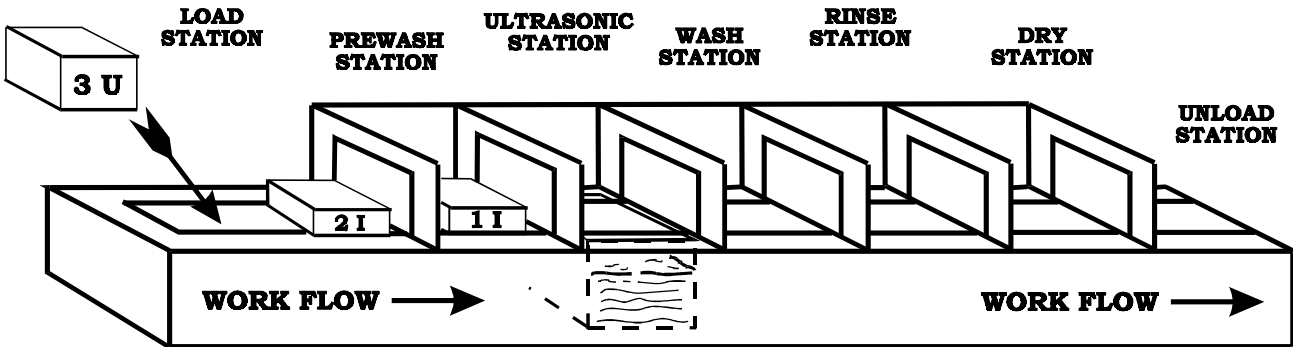
For rack 2l: The Prewash treatment begins for the programmed time of 90 seconds.

For rack 1l: The Hinged Items treatment begins for the programmed time of 240 seconds.

Wash, Rinse, and Dry Stations remain idle.

Prewash treatment ends. Then Hinged Items treatment ends. Exhaust (timed) starts - ends. Exhausting (untimed) starts. All doors Open.

D



Hinged Items rack 1I is indexed into the Wash Station.
Hinged Items rack 2I is indexed into the Hinged Items Station.
Utensil rack 3U is indexed into the Prewash Station. (Height of rack triggers photo-sensor; controller cancels Hinged Items and Lubrication treatments.)
Hinged Items rack 4I is indexed to the forward load position.
Utensil rack 5U is placed on the rearward load position.

All doors close. Exhausting ends. Hinged Items rack 2I is lowered into the Hinged Items immersion tank.

For rack 3U: The Prewash treatment begins for the programmed time of 90 seconds.

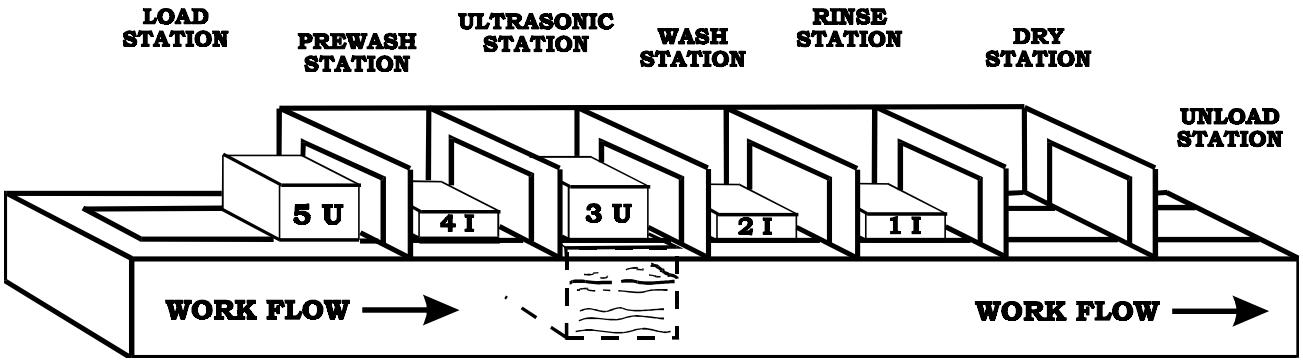
For rack 2I: The Hinged Items treatment begins for the programmed time of 240 seconds.

For rack 1I: The Wash treatment begins for the programmed time of 240 seconds.

Rinse and Dry Stations remain idle.

Prewash treatment ends. Then Hinged Items and Wash treatments end. Exhaust (timed) starts - ends. Exhausting (untimed) starts. All doors Open.

E



Hinged Items rack 1I is indexed into the Rinse Station.
Hinged Items rack 2I is indexed into the Wash Station.
Utensil rack 3U is indexed into the Hinged Items Station.
Hinged Items rack 4I is indexed to the Prewash Station.
Utensil rack 5U is indexed to the forward load position.

All doors close. Exhausting ends. Utensil rack 3U is not lowered into the Hinged Items Immersion Tank.

For rack 4I: The Prewash treatment begins for the programmed time of 90 Seconds.

For rack 3U: No Hinged Items treatment is given. The Station remains idle.

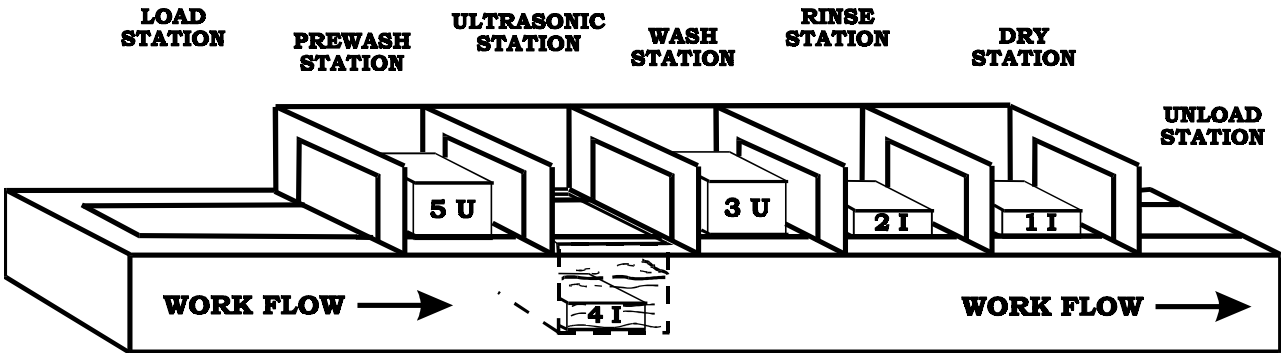
For rack 2I: The Wash treatment begins for the programmed time of 240 seconds.

For rack 1I: The Rinse treatment begins for the programmed time of 180 seconds. This is followed by a Pure Rinse treatment (purified water and lubricant) for the programmed time of 30 seconds.

The Dry Station remains idle.

Prewash treatment ends. Then the Wash treatment ends. Then the Rinse treatments end. Exhaust (timed) starts - ends. Exhausting (untimed) starts. All doors open.

F



Hinged Items rack 1I is indexed into the Dry Station.
Hinged Items rack 2I is indexed into the Rinse Station.
Utensil rack 3U is indexed into the Wash Station.
Hinged Items rack 4I is indexed to the Hinged Items Station.
Utensil rack 5U is indexed to the Prewash Station. (Height of rack triggers photo-sensor; controller cancels Hinged Items and Lubrication treatments.)

All doors close. Exhausting ends. Hinged Items rack 4I is lowered into the Hinged Items Immersion Tank.

For rack 5U: The Prewash treatment begins for the programmed time of 90 seconds.

For rack 4I: The Hinged Items treatment begins for the programmed time of 240 seconds.

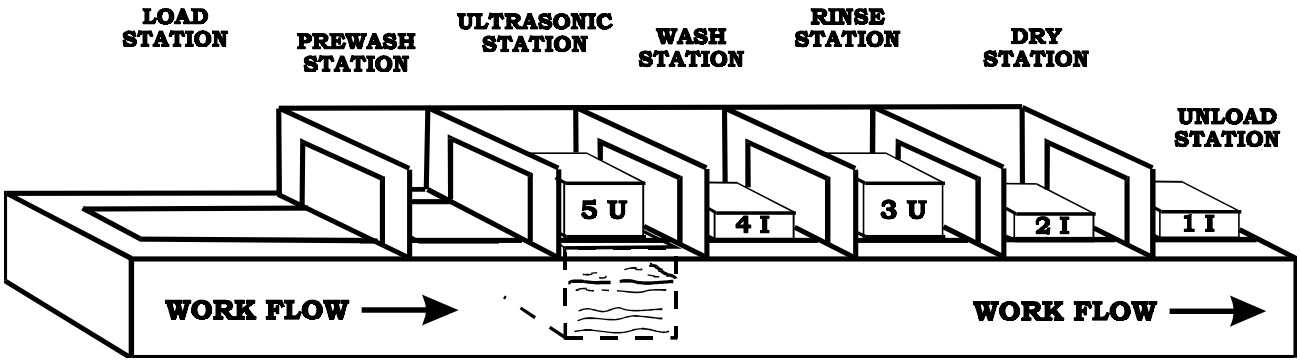
For rack 3U: The Wash treatment begins for the programmed time of 240 seconds.

For rack 2I: The Rinse treatment begins for the programmed time of 180 seconds. This is followed by a Pure Rinse treatment (purified water and lubricant) for the programmed time of 30 seconds.

For rack 1I: The Dry treatment begins for the programmed time of 240 seconds.

Prewash treatment ends. Then the Wash treatment ends. Then the Rinse treatments end. And lastly, the Dry treatment ends. Exhaust (timed) starts - ends. Exhausting (untimed) starts. All doors open.

G



Hinged Items rack 1I is indexed onto the Unload Station.
Hinged Items rack 2I is indexed into the Dry Station.
Utensil rack 3U is indexed into the Rinse Station.
Hinged Items rack 4I is indexed to the Wash Station.
Utensil rack 5U is indexed to the Hinged Items Station.

All doors close. Exhausting ends. Utensil rack 5U is not lowered into the Hinged Items immersion tank.

Prewash and Hinged Items Stations remain idle.

For rack 5U: No Hinged Items treatment is given.

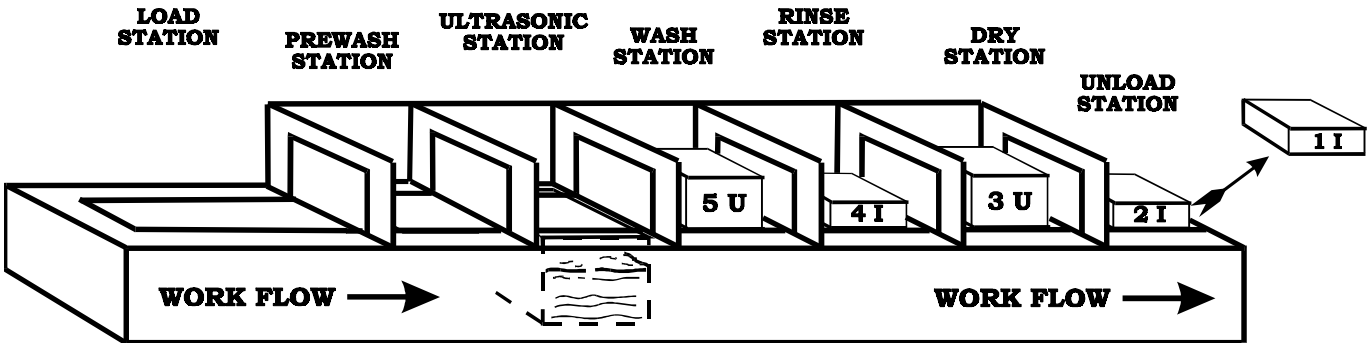
For rack 4I: The Wash treatment begins for the programmed time of 240 seconds.

For rack 3U: The Rinse treatment begins for the programmed time of 180 seconds. This is followed by a Pure Rinse treatment for the programmed time of 30 seconds. No lubricant is injected into the purified water supply.

For rack 2I: The Dry treatment begins for the programmed time of 240 seconds.

The Wash treatment ends. Then the Rinse treatments end. And lastly, the Dry treatment ends. Exhaust (timed) starts - ends. Exhausting (untimed) starts. All doors open.

H



Hinged Items rack 1I is indexed off the Unload Station onto an accumulation table or distribution conveyor.
Hinged Items rack 2I is indexed onto the Unload Station.
Utensil rack 3U is indexed into the Dry Station.
Hinged Items rack 4I is indexed to the Rinse Station.
Utensil rack 5U is indexed to the Wash Station.

All doors close. Exhausting ends.

Prewash and Hinged Items Stations remain idle.

For rack 5U: The Wash treatment begins for the programmed time of 240 seconds.

For rack 4I: The Rinse treatment begins for the programmed time of 180 seconds. This is followed by a Pure Rinse treatment (purified water and lubricant) for the programmed time of 30 seconds.

For rack 3U: The Dry treatment begins for the programmed time of 240 seconds.

The Wash treatment ends. Then the Rinse treatments end. And lastly, the Dry treatment ends. Exhaust (timed) starts - ends. Exhausting (untimed) starts. All doors open.

I

- Hinged Items rack 2I is indexed off the Unload Station onto an accumulation table or distribution conveyor.
- Utensil rack 3U is indexed onto the Unload Station.
- Hinged Items rack 4I is indexed into the Dry Station.
- Utensil rack 5U is indexed to the Rinse Station (Load receives no lubricant in the Pure Rinse treatment.).

J

- Utensil rack 3U is indexed off the Unload Station onto an accumulation table or distribution conveyor.
- Hinged Items rack 4I is indexed onto the Unload Station.
- Utensil rack 5U is indexed into the Dry Station.

K

- Hinged Items rack 4I is indexed off the Unload Station onto an accumulation table or distribution conveyor.
- Utensil rack 5U is indexed onto the Unload Station.

ALL STATIONS ARE NOW EMPTY SO DOORS REMAIN OPEN. Washer idles in "FINAL BASKET KICKOFF" for 30 seconds. Then, utensil rack 5U is indexed off the Unload Station onto an accumulation table or distribution conveyor. All doors close. THE MAIN CONTROL PANEL IS DISPLAYED, INDICATING THAT THE PROCESSING CYCLE HAS BEEN COMPLETED.

CONTROL PANEL OPERATION

The Control Panel on this Washer provides the operator with a touch screen interface linked to the Programmable Logic Controller (PLC) located in the Control Box. Using this Panel, the operator is able to:

- Program the cycle phase timing.
- Program the cycle phase temperature(s).
- Start a processing cycle.
- Monitor the status of an ongoing cycle.
- Manually drain the Washer's reservoir tanks.
- Adjust the touch screen contrast.
- Access load counters.
- Manually open or close the Washer's guillotine doors.

In addition to the above, supervisory personnel are able to access a sub-panel that enables the user to control a selection of washer functions. See Appendix C: Supervisor Panel.

The PC power switch must be in the ON position to activate the Control Panel. The PC Power Switch is located in the Control Box. When activated, a green indicator in the upper right corner of the Panel's frame will light, and the screen will display the MAIN Panel. However, though activated, the touch screen will be inoperative, and a "CONTROL POWER OFF" message will be displayed.

Turning the washer's CONTROL POWER ON-OFF/RESET Switch to the ON positon will make the Control Panel operative. When operative, the START Push Button will replace the "CONTROL POWER OFF" message.

NOTE

If the Control Panel's touch screen remains idle and untouched for one hour it will automatically go dark. This is its "screen-saver" feature. Touch the screen anywhere, just once, to re-illuminate it.

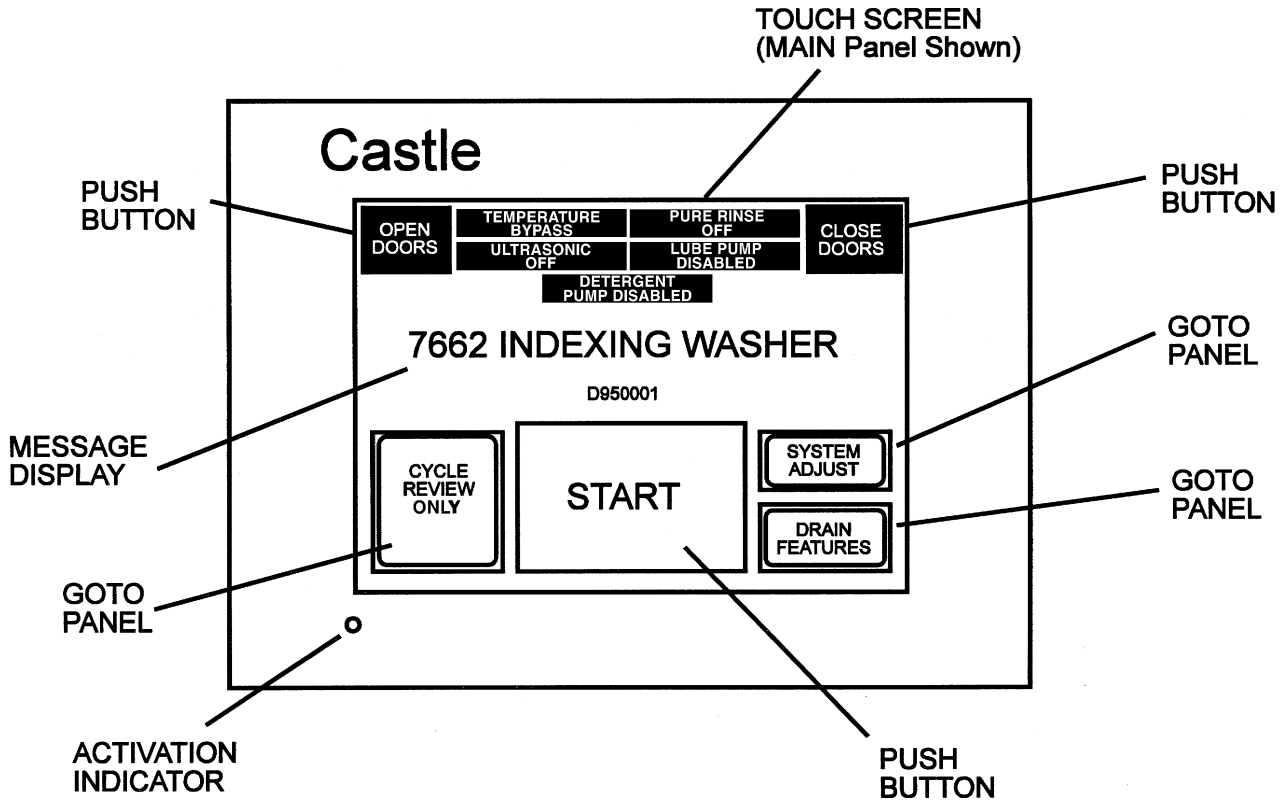


FIGURE 2-1: MAIN CONTROL PANEL

As shown in Figure 2-1, the touch screen for the MAIN Control Panel consists of three Push Buttons, three GoTo Panels, and a Message Display.

START Push Button
Starts (when pressed) a routine processing cycle.

OPEN DOORS Push Button
Opens (when pressed) the guillotine doors that separate the washer stations. Permits operator to perform a quick visual check of all washer treatment stations prior to the start of routine operation.

CLOSE DOORS Push Button
Closes (when pressed) the guillotine doors that separate the washer stations.

CYCLE REVIEW AND PROGRAM GoTo Panel
Displays (when pressed) a Cycle Review And Program sub-panel that enables the operator to check/change cycle phase time or temperature setpoints.

SYSTEM ADJUST GoTo Panel
Displays (when pressed) a System Adjust sub-panel that enables the operator to set the touch screen contrast and check/reset load counters.

DRAIN FEATURES GoTo Panel
Displays (when pressed) a Drain Features sub-panel that enables the operator to manually drain the washer's reservoir tanks (except for the purified water reservoir tank).

Message Display
Identifies the washer by model and serial number. Also displays notifications related to the status of selected washer functions/components (See Appendix C: Supervisor Panel.).

Using the CYCLE REVIEW AND PROGRAM GoTo Panel

Pressing the CYCLE REVIEW AND PROGRAM GoTo Panel at the MAIN Control Panel will display the Cycle Review And Program sub-panel. This sub-panel provides the operator with two Push Buttons and eleven Data Keys for programming cycle phases.

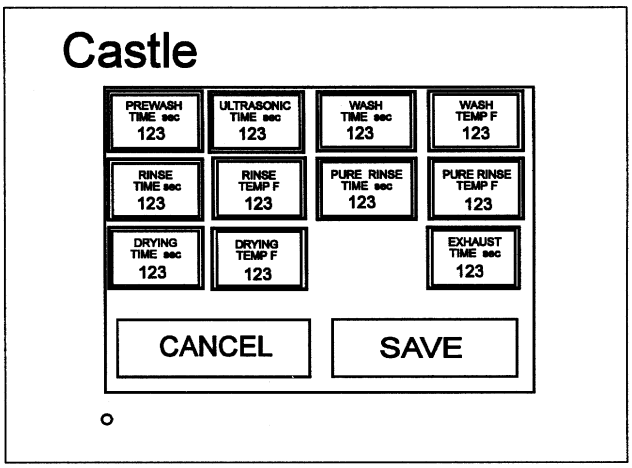


FIGURE 2-2: CYCLE REVIEW AND PROGRAM SUB-PANEL

PREWASH TIME sec Data Key
Displays the current timing value (in seconds) of the Prewash phase's programmed setpoint. Pressing this Data Key will display a Data Entry Keypad that is used for programming the setpoint.

ULTRASONIC TIME sec Data Key
Displays the current timing value (in seconds) of the Ultrasonic phase's programmed setpoint. Pressing this Data Key will display a Data Entry Keypad that is used for programming the setpoint.

WASH TIME sec Data Key
Displays the current timing value (in seconds) of the Wash phase's programmed setpoint. Pressing this Data Key will display a Data Entry Keypad that is used for programming the setpoint.

WASH TEMP F Data Key

Displays the current value (in degrees Fahrenheit) of the programmed temperature setpoint for the detergent water held in the washer's wash water sump (reservoir tank). Pressing this Data Key will display a Data Entry Keypad that is used for programming the setpoint.

RINSE TIME sec Data Key

Displays the current timing value (in seconds) of the Rinse phase's programmed setpoint. Pressing this Data Key will display a Data Entry Keypad that is used for programming the setpoint.

RINSE TEMP F Data Key

Displays the current value (in degrees Fahrenheit) of the programmed temperature setpoint for the water held in the washer's rinse water sump (reservoir tank). Pressing this Data Key will display a Data Entry Keypad that is used for programming the setpoint.

PURE RINSE TIME sec Data Key

Displays the current timing value (in seconds) of the Purified Rinse phase's programmed setpoint. Pressing this Data Key will display a Data Entry Keypad that is used for programming the setpoint.

PURE RINS TEMP F Data Key

Displays the current value (in degrees Fahrenheit) of the programmed temperature setpoint for the water held in the washer's pure rinse water sump (reservoir tank). Pressing this Data Key will display a Data Entry Keypad that is used for programming the setpoint.

DRYING TIME sec Data Key

Displays the current timing value (in seconds) of the Drying phase's programmed setpoint. Pressing this Data Key will display a Data Entry Keypad that is used for programming the setpoint.

DRYING TEMP F Data Key

Displays the current value (in degrees Fahrenheit) of the programmed temperature setpoint for the Drying phase. Pressing this Data Key will display a Data Entry Keypad that is used for programming the setpoint.

EXHAUST TIME sec Data Key

Displays the current timing value (in seconds) for exhausting aerosols from the washer stations prior to the automatic opening of the doors following completion of a cycle. Recommended setting is 60 seconds. Pressing this Data Key will display a Data Entry Keypad that is used for programming the setpoint. NOTE: The timed exhaust begins at the conclusion of the final processing treatment. Doors open when the timed exhaust period ends. Automatic exhausting then continues until the doors close.

CANCEL Push Button

Cancels (when pressed) any changes made to the cycle program and exits the sub-panel, returning the operator to the Main Panel.

SAVE Push Button

Saves (when pressed) any changes made to the cycle program and exits the sub-panel, returning the operator to the Main Panel. If no changes were made, pressing this Button will exit the sub-panel, leaving cycle values unaffected.

Using a Data Entry Keypad

Shown here is a typical Data Entry Keypad that will be displayed when a Data Key is pressed. This particular one is used for programming the WASH TIME setpoint. It will show the "current value" of the setpoint, the "minimum" value that can be entered (5 seconds), and the "maximum" value that can be entered (900 seconds).

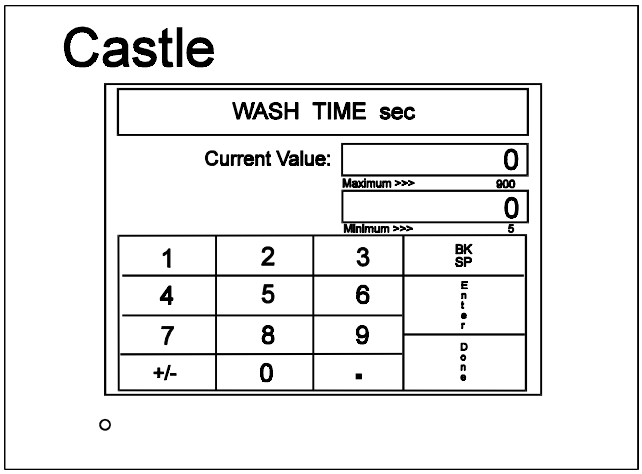


FIGURE 2-3: DATA ENTRY KEYPAD

To operate the Keypad:

1. Press the correct numerical keys for the desired value.
   - The value that was entered will be displayed.

2. If the value is correct, press the ENTER Key.
   - The new value will appear in the CURRENT VALUE block.

3. To exit the Data Entry Keypad, press the DONE Key.
   - The Cycle Review And Program sub-panel will again be displayed.

Using the SYSTEM ADJUST GoTo Panel:

Pressing the SYSTEM ADJUST GoTo Panel at the MAIN Panel will display the System Adjust sub-panel. This sub-panel displays the washer's model number, and the total number of loads that have been run on the unit since it was put into operation. It also provides the operator with one GoTo Panel, a resetable Load Counter, and two Push Buttons.

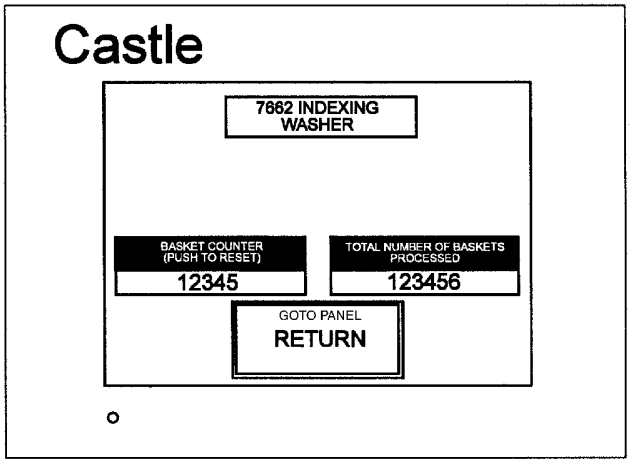


FIGURE 2-4: SYSTEM ADJUST SUB-PANEL

RETURN GoTo Panel

Exits (when pressed) the sub-panel and returns to the MAIN Panel.

INCREASE/DECREASE SCREEN CONTRAST Push Buttons

Adjust (when pressed) the contrast of the touch screen display.

TOTAL NUMBER OF BASKETS Counter

Displays the total number of loads that have been run on the unit since it was put into operation. This Counter is not resetable.

BASKET COUNTER (PUSH TO RESET) Push Button

Displays the total number of loads that have been run on the unit since the Button itself was last pushed. Pushing the Button resets the Counter to "0".

Using The DRAIN FEATURES GoTo Panel:

Pressing the DRAIN FEATURES GoTo Panel at the MAIN Control Panel will display the Drain Features sub-panel. This sub-panel provides the operator with four Push Buttons, two Data Keys, and one GoTo Panel.

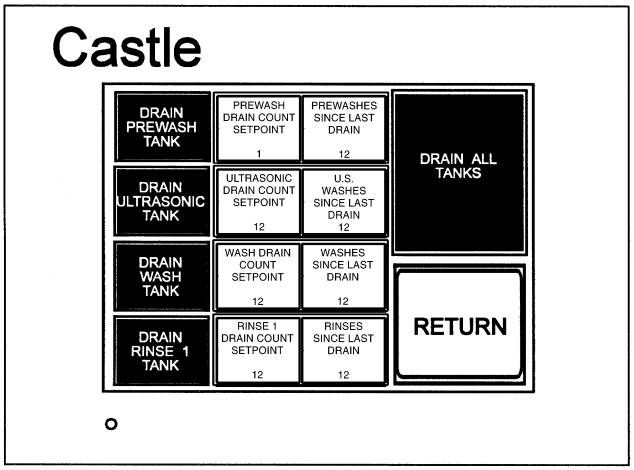


FIGURE 2-5: DRAIN FEATURES SUB-PANEL

RETURN GoTo Panel

Exits (when pressed) the sub-panel and returns to the MAIN Panel. (RETURN is inoperative during manual draining.)

DRAIN PREWASH TANK Push Button

Manually drains (when pressed) the contents of the Prewash Station's reservoir tank. Button will display a "PREWASH TANK DRAINING" message during draining. Tank will refill when either the POWER ON/OFF-RESET Switch is turned ON, or the START Push Button is pressed at the Control Panel.

DRAIN ULTRASONIC TANK Push Button

Manually drains (when pressed) the contents of the Ultrasonic Station's reservoir tank. Button will display a " DRAINING ULTRASONIC TANK " message during draining. Tank will refill when either the POWER ON/OFF-RESET Switch is turned ON, or the START Push Button is pressed at the Control Panel.

DRAIN WASH TANK Push Button

Manually drains (when pressed) the contents of the Wash Station's section of the wash-rinse reservoir tank. Button will display a " DRAINING WASH TANK " message during draining. Tank will refill when either the POWER ON-OFF/RESET Switch is turned ON, or the START Push Button is pressed at the Control Panel.

NOTE

The wash-rinse reservoir tank is divided into two sections: one section holds the detergent water used by the Wash Station, the other section holds the rinse water used by the Rinse Station.

DRAIN RINSE 1 TANK Push Button

Manually drains (when pressed) the rinse section of the wash-rinse reservoir tank. Button will display a "DRAINING RINSE 1 TANK " message during draining. Tank will refill when either the POWER ON-OFF/RESET Switch is turned ON, or the START Push Button is pressed at the Control Panel.

DRAIN ALL TANKS Push Button

Manually drains (when pressed) the contents of the prewash reservoir tank, the ultrasonic immersion tank, and the wash-rinse reservoir tank. Button will display a "DRAINING ALL TANKS" message during draining. Tanks will refill when either the POWER ON-OFF/RESET Switch is turned ON, or the START Push Button is pressed at the Control Panel.

NOTE

The pure rinse reservoir tank can only be drained by opening a hand-operated drain valve. If draining of this tank is required, it should be done by qualified maintenance personnel only.

PREWASH DRAIN COUNTS Data Key

Displays the current programmed value (1 through 9) of the drain count for the prewash reservoir tank. Pressing this Data Key will display a Data Entry Keypad that is used for programming this value.

NOTE

A drain count is the number of times the contents of a tank are to be retained for reuse. For example: A drain count of "2" means that the contents will be used twice, then discharged to drain. Refill is automatic.

ULTRASONIC DRAIN COUNTS Data Key
WASH DRAIN COUNTS Data Key
RINSE 1 DRAIN COUNTS Data Key

Displays the current programmed value (1 through 99) of the drain count for the ultrasonic, the wash, and the rinse 1 reservoir tanks. Pressing this Data Key will display a Data Entry Keypad that is used for programming this value.

NOTE

If desired, an operator may stop the draining process prematurely by turning the POWER ON-OFF/RESET Switch to OFF. This will automatically close all open drain valves. When the Switch is turned back to the ON position, the partially empty tank(s) will be refilled.

CYCLE PROTECTION

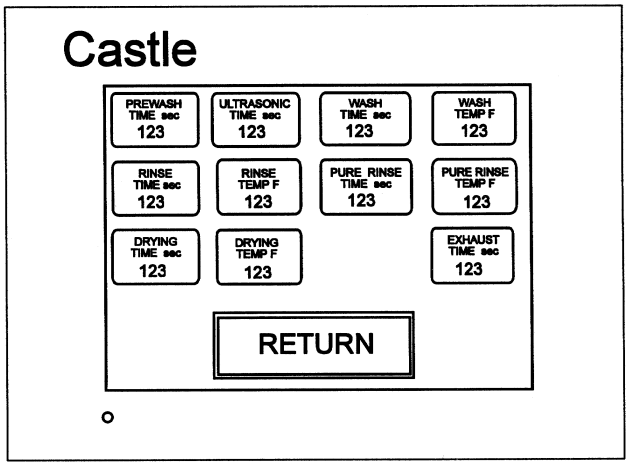


FIGURE 2-6: CYCLE REVIEW AND PROGRAM (PROTECTED) SUB-PANEL

Supervisory personnel are provided with the means to protect the selectable values of a cycle from change. When a cycle is protected, the Cycle Review And Program sub-panel will appear as shown in Figure 2-6. Operator access to all Data Entry Keypads is prohibited; the CANCEL and SAVE Push Buttons are replaced with a RETURN Push Button.

Processing Cycle Screen Description

The following is a description of the format for the processing cycle screen that will appear on the Control Panel during the course of routine processing.

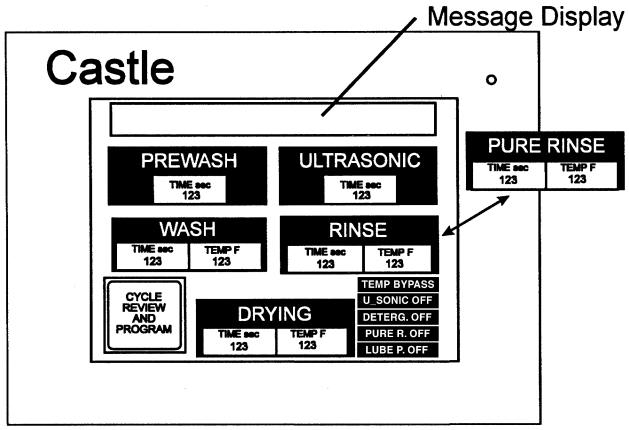


FIGURE 2-7: PROCESSING CYCLE SCREEN

PREWASH Treatment Display

Displays the timing setpoint for the prewash treatment. During treatment, timing progresses downward from setpoint to 0. (NOTE: Every second may not be displayed due to congested data communications traffic.)

Message Display located above the timer display identifies the treatment as "PREWASH". This will appear in reverse typeface (white letters) when the station is idle. When the station is processing a load, "PREWASH" will be displayed in standard typeface (black letters on white background). Also, whenever the station's reservoir tank is being filled or drained, notification will be displayed in standard typeface.

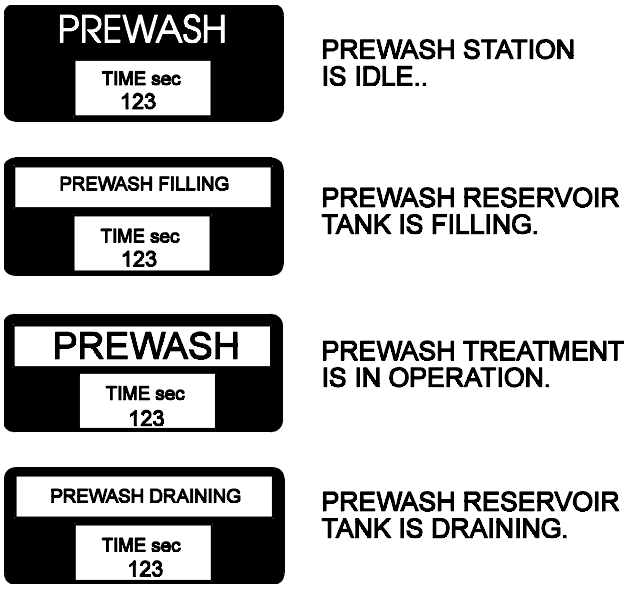


FIGURE 2-8: PREWASH TREATMENT DISPLAY MESSAGES

ULTRASONIC Treatment Display

Displays the timing setpoint for the ultrasonic treatment. During treatment, timing progresses downward from setpoint to 0. (NOTE: Every second may not be displayed due to congested data communications traffic.)

A Message Display located above the timer display identifies the treatment as "ULTRASONIC". This will appear in reverse typeface (white letters) when the station is idle. When the station is processing a load, "ULTRASONIC" will be displayed in standard typeface (black letters on white background). Also, whenever the station's immersion tank is being filled, degassed, or drained, notification will be displayed in standard typeface.

WASH Treatment Display

Displays the timing setpoint for the wash treatment. During treatment, timing progresses downward from setpoint to 0 (NOTE: Every second may not be displayed due to congested data communications traffic.).

Displays the actual temperature (in degrees Fahrenheit) of the contents of the wash water reservoir tank.

A Message Display located above the timer and temperature displays identifies the treatment as "WASH". This will appear in reverse typeface (white letters) when the station is idle. When the station is processing a load, "WASH" will be displayed in standard typeface (black letters on white background). Also, whenever the station's reservoir tank is being filled or drained, notification will be displayed in standard typeface.

RINSE Treatment Display & PURE RINSE Treatment Display

Alternately (every 3 - 4 seconds) displays the timing setpoints for the rinse and pure rinse treatments, along with the actual temperature (in degrees Fahrenheit) of the contents of the rinse and pure rinse reservoir tanks.

A Message Display located above the timer and temperature display that appears on the screen will identify whether the display applies to the "RINSE" or the "PURE RINSE" treatment. This will appear in reverse typeface (white letters) when the station is idle. During a rinse treatment, only the "RINSE" display will appear; during a pure rinse treatment, only "PURE RINSE" will appear. ("RINSE" or "PURE RINSE" will be displayed in standard typeface. Also, whenever the rinse or pure rinse reservoir tank is being filled, notification will be displayed in standard typeface.) Timing progresses downward from setpoint to 0 (NOTE: Every second may not be displayed due to congested data communications traffic.).

DRYING Treatment Display

Displays the timing setpoint for the drying treatment. During treatment, timing progresses downward from setpoint to 0 (NOTE: Every second may not be displayed due to congested data communications traffic.).

Displays the actual temperature (in degrees Fahrenheit) of the Dry Station.

A Message Display located above the timer and temperature displays identifies the treatment as "DRYING". This will appear in reverse typeface (white letters) when the station is idle. When the station is processing a load, "DRYING" will be displayed in standard typeface (black letters on white background).

CYCLE REVIEW AND PROGRAM GoTo Panel

Displays (when pressed) a Cycle Review And Program sub-panel that enables the operator to check/change cycle phase time or temperature setpoints during washer operation.

The function of this GoTo Panel is identical to the Cycle Review And Program GoTo Panel on the MAIN Control Panel.

To change a treatment setpoint:

1. Press the Cycle Review And Program GoTo Panel.
2. Locate and press the desired Data Key.
3. Make setpoint change at Data Entry Keypad.
4. Press SAVE Push Button.

Result: The new setpoint will be in effect, starting with the next load that is indexed into the treatment station.

Message Display

Identifies the status of the washer when performing automatic functions that are not related to a specific treatment. For example: exhaust, indexing, doors opening, final basket kickoff, etc.

Supervisor Message Display

Displays notifications related to the status of selected washer functions/components (See Appendix C: Supervisor Panel.).

OPERATING INSTRUCTIONS

Instructions carried here apply to the daily operation of this washer. It assumes that the unit has been properly installed and pre-tested, that it is clean, liquid supply levels have been checked, side access doors are closed and latched securely, etc.

Avoid burns. Racks, baskets, etc. indexed out of the Drying Station will be hot! Allow to cool, or wear heat-resistant gloves before handling.

Make sure that the contents of baskets/racks are not loaded in such a manner that they might obstruct the motorized movements of washer components: spray manifolds, elevator, doors, etc. Careless loading could result in damage to goods, equipment, or components.

The maximum load bearing capacity of the elevator in the Ultrasonic Station is 40 pounds (18.16 Kg). DO NOT OVERLOAD ultrasonic racks. Racks that are too heavy will prevent the elevator from rising out of the immersion tank, causing an abort condition to occur.

DAILY OPERATION

Washer Status Prior To Operation:

The POWER ON-OFF/RESET Switch is OFF. The Control Panel's touch screen is dark; the activation indicator is lit. Doors are closed. The Wash, Rinse 1, and Prewash reservoir tanks, along with the Ultrasonic immersion tank, are empty.

If desired, the Control Panel's touch screen may be illuminated by touching it. However, it will be inoperative until the POWER ON-OFF/RESET Switch is turned ON.

1. Turn the POWER ON-OFF/RESET Switch to ON.
   - The Switch itself will light (green).
   - If dark, the Control Panel's touch screen will light. If already illuminated, the START Push Button will replace the "CONTROL POWER OFF" message.
   - Reservoir and immersion tank filling will begin. When full, heating and degassing will occur.

After filling, the Ultrasonic immersion tank will expend a preset amount of time (eg: 5 minutes) degassing its solution to remove air bubbles. If a cycle has been started, the Ultrasonic Station will not lower an Ultrasonic rack into the immersion tank until that degassing process has been completed.

2. Place one or two loaded racks on the Load Station.
   - Position the first rack on the runner frames between the Prewash Station and the forward set of push-dogs that are situated on either side of the indexer. Then, slide the rack back until it rests against the push-dogs.
   - Position the second rack behind the first, and slide it back until it rests against the rear set of push-dogs.

3. If desired, access the System Adjust sub-panel and reset the Basket Counter to "0".

4. If desired, access the Cycle Review And Program sub-panel to check/change the time and temperature setpoints.

5. Press the START Push Button at the MAIN Panel to begin processing.
   - The Processing Cycle Screen will be displayed on the Control Panel. (See Processing Cycle Screen Description, page 2-6.)
   - Washer doors will open and the first rack will be indexed into the Prewash Station. The second rack will be indexed into the position previously occupied by the first rack. The doors will then close, and the first rack will be subjected to the prewash treatment. (See Processing Cycle Description, page 1-6.)

6. Continue to place loaded racks on the Load Station - as required.
   - Automatic processing will end when there are no more racks on the Load Station and none waiting for processing in the treatment stations. At that point the last rack will be indexed out of the Drying Station. The doors will remain open. A "FINAL BASKET KICKOFF" message will appear on the Processing Cycle Screen. Indexing will occur one more time to clear the last rack from the Unload Station. The washer doors will then close and the MAIN Panel will be displayed.
   - When desired, washer operation may be resumed. Follow Steps 2, 5, & 6.

END OF DAILY OPERATION

Access the Drain Features sub-panel. Press the DRAIN ALL TANKS Push Button. Wait for draining to stop. Exit the Drain Features sub-panel. Turn the POWER ON-OFF/RESET Switch to OFF.

OPERATIONAL NOTES

NOTE: Once loaded racks are in place on the Load Station, the operator may press the START Push Button at any time. The first load will be indexed into the Prewash Station. Processing will begin, at the appropriate stations, as soon as the related pre-conditions for processing have been met (fill, temperature, degas, etc.).

NOTE: If a visual check of the washer interior is desired prior to starting a processing cycle, the operator may press the OPEN DOORS Push Button at the Control Panel. The guillotine doors will open. After checking, the operator may then press the CLOSE DOORS Push Button to close the doors, or press the START Push Button to begin processing. If the START Push Button is pressed with doors open, the first load will be indexed into the Prewash Station. After indexing, the doors will close automatically.

NOTE: If there are no loads on the Load Station (and none in the washer) when the START Push Button is pressed, the washer doors will open, indexing will occur, the doors will close, and the MAIN Panel will be returned to the screen.
No processing will take place.

NOTE: To temporarily discontinue washer operation for a non-emergency situation, turn the POWER ON-OFF/RESET Switch to OFF, then back to ON. Washer operation will stop. All processing timers will reset. Temperature setpoints and reservoir tank levels will be automatically maintained. The Processing Cycle Screen will be replaced by the MAIN panel.

NOTE: To resume washer operation, press the START Push Button on the MAIN Panel. Timing for all discontinued treatments will begin again from their programmed setpoints.

EMERGENCY STOP

To Halt Automatic Processing:

Press either one of the two (red) EMERGENCY STOP Buttons. One is located at the Load Station and one at the Unload Station.

- The washer will immediately cease processing activities.
- The light in the POWER ON-OFF/RESET Switch will go out, indicating the electrical circuit through the Switch has been disconnected.
- Air will be released from the pneumatic system that powers the doors, the Ultrasonic elevator, and the indexing conveyor. (If up - doors and elevator drop. If in motion, the indexer will halt and remain stationary.)
- All processing timers will reset on the processing cycle screen. Temperature setpoints and reservoir tank levels will not be automatically maintained.
- The EMERGENCY STOP Button will remain in the depressed position.

To Resume Automatic Processing:

Use the Reset Key to release the EMERGENCY STOP Button.

- The light in the POWER ON-OFF/RESET Switch comes back on, indicating the electrical circuit through the Switch has been restored.
- Air pressure is restored to the pneumatic system.

  NOTE: If the indexer is in its forward extended position and the Button is released, the indexer may retract faster than the guillotine doors can be raised, resulting in contact between the indexer's push-dogs and the bottom of the doors. If damage results, contact qualified service personnel. If indexer is in its retracted position and doors are down, no movement will occur.

- Automatic maintenance of temperature setpoints and reservoir tank levels is resumed.
- The MAIN Panel is displayed.

Press the START Push Button.

- Timing for all discontinued treatments will begin again from their programmed setpoints.

ULTRASONIC DOOR SAFETY STOP SWITCH

The access door to the Ultrasonic Compartment is equipped with a magnetic, safety stop switch. The switch is located in the upper door frame; the screw-head magnet is installed in the top edge of the door. When the door is removed, or otherwise unlatched and cracked-open to the point that magnetic contact is broken, the effect will be the same as if one of the washer's EMERGENCY STOP Buttons was pressed.

In the event this switch is tripped, the procedure for resuming washer operation is as follows:

1. Close and latch the door to reset the switch.
2. Press the START Push Button at the MAIN Panel.

PC POWER SWITCH

The PC (Programmable Controller) Power Switch is located in the washer's control box. Turning this switch to the off position will also terminate washer operation. The effect will be the same as if one of the washer's EMERGENCY STOP Buttons was pressed. In addition, the Control Panel will be turned off.

Access to this switch is restricted to qualified service personnel.

MAIN POWER SUPPLY

Switching off the washer's electrical power supply at the washer's circuit breaker box will also terminate washer operation. The effect will be the same as switching off the PC Power Switch. In addition, all electrical power to washer components will be disconnected.

CYCLE ABORT

In the event any one of the following conditions occurs the washer will cease operation, an alarm will sound, and a CYCLE ABORTED panel will be displayed identifying the condition:

Cycle Abort Messages:

WASH TEMPERATURE TIMEOUT
RINSE 1 TEMPERATURE TIMEOUT
PURE RINSE TEMPERATURE TIMEOUT
DRYER TEMPERATURE TIMEOUT
WASH THERMOCOUPLE FAILURE
RINSE 1 THERMOCOUPLE FAILURE
PURE RINSE THERMOCOUPLE FAILURE
DRYER THERMOCOUPLE FAILURE
PREWASH FILL TIMEOUT
RINSE 1 FILL TIMEOUT
PURE RINSE FILL TIMEOUT
WASH FILL TIMEOUT
ULTRASONIC FILL TIMEOUT
PREWASH DRAIN TIMEOUT
WASH DRAIN TIMEOUT
RINSE 1 DRAIN TIMEOUT
ULTRASONIC DRAIN TIMEOUT
MOTOR OVERLOAD
INDEX FORWARD OBSTRUCTION
INDEX BACK OBSTRUCTION
DOOR OPEN OBSTRUCTION
DOOR CLOSED OBSTRUCTION
ELEVATOR DOWN OBSTRUCTION
ELEVATOR UP OBSTRUCTION
PURE RINSE DRAIN TIMEOUT
REPLACE PLC BATTERY
PLC SYSTEM FAULT
PLC I/O FAULT
PLC CONFIGURATION FAULT
PLC CPU FAILURE
PLC COMMUNICATIONS FAILURE
SYSTEM POWER WAS RESET
CONTROL POWER WAS RESET

The CYCLE ABORTED Panel will present the operator with a RESET Push Button (See Figure 3-1.).

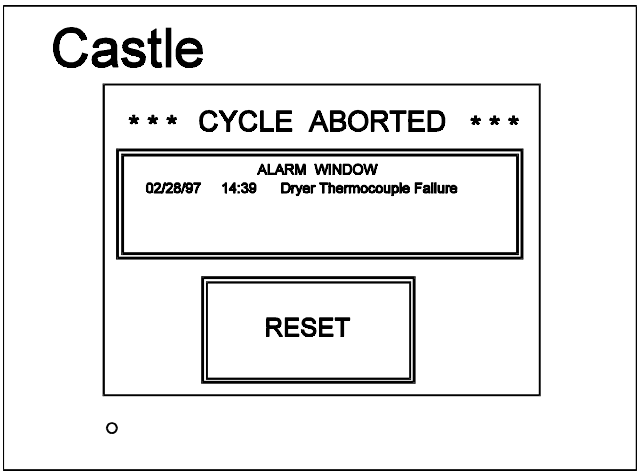


FIGURE 3-1: CYCLE ABORT PANEL

In some cases the operator may correct the condition. For example: Adjusting the position of a load or its rack in response to an "INDEX FORWARD OBSTRUCTION". After correction, the operator may then press the RESET Push Button to exit the CYCLE ABORTED Panel and return to the MAIN Panel. The START Push Button may then be pressed to restart washer operation.

If the condition is not correctable, washer operation should be terminated by turning the POWER ON-OFF/RESET Switch to OFF. The operator should then notify qualified service personnel.

OBSTRUCTION: INDEXER, DOOR, OR ELEVATOR

Should the automatic movement of the pneumatically powered indexer, guillotine doors, or ultrasonic elevator be obstructed, the obstructed component will return to its starting position and the CYCLE ABORTED panel will be displayed.

Depending on the location of the obstruction, and the direction in which the component was moving when the obstruction occurred, correction of the problem may have to be undertaken by qualified service personnel.

- For Example: After indexing, a basket is misaligned between the Wash and Rinse Stations as the guillotine doors close. The Wash-Rinse door presses against the basket. After a few seconds the obstruction is recognized by the controller and all doors return to the open position. Washer operation stops and the CYCLE ABORTED Panel appears.

- If the EMERGENCY STOP Button is pressed at this time, the pneumatic system will cease functioning and the guillotine doors will drop, bringing the Wash-Rinse door back down on the basket.

- Likewise, if a Side Access Door to either the Wash or Rinse Station is opened, the pneumatic system will cease functioning and the guillotine doors will drop, bringing the Wash-Rinse door back down on the basket.

- In this type of situation, qualified service personnel should be called upon to clear the obstruction.

Operating personnel should avoid any attempt to clear the following two types of obstructions: DOOR CLOSED OBSTRUCTION and ELEVATOR DOWN OBSTRUCTION. In either condition the weight of the component could cause crushing injuries to body parts.

INDEX HOLD

Index Hold is a response by the washer to traffic conditions beyond the Unload Station.

Should two washers be about to index (kickoff) processed racks from their Unload Stations onto a common conveyor at approximately the same time, the Index Hold system will delay indexing one or the other for a period of 30 seconds. An "INDEX HOLD" message will be displayed on the processing cycle screen for the duration of the delay.

Should a single washer sense that space is not available on an accumulation table or conveyor, it will delay indexing a processed rack off of the Unload Station. The washer will idle until conditions are such that the rack can be indexed. An "INDEX HOLD" message will be displayed on the processing cycle screen for the duration of the delay.

NOTES

MAINTENANCE

DAILY

INSPECT AND CLEAN SURFACES

Inspect exterior surfaces of the Washer.

Clean with mild detergent and a soft, damp cloth.

CHECK LIQUID SUPPLIES

Check all liquid supply containers.

Refill or replace as required.

CLEAN DEBRIS SCREENS

Remove and clean the debris screens located on the floor of the Prewash, Wash, and Rinse Station chambers. Screens have no fasteners and are easily removable by hand.

NOTE

The following MONTHLY, EVERY 6 MONTHS, and ANNUAL maintenance procedures should be performed by qualified maintenance personnel only.

MONTHLY

CHECK - CLEAN WASH/RINSE SPRAY MANIFOLDS (See Figure 4-1)

Check the interior of the Rinse and Wash Station Spray Manifolds for any accumulation of fine debris. Clean if required.

Disassembly of each manifold's bottom section will be required.

1. Loosen (turn counterclockwise) the Hand Screw to spread the vertical manifold sections so that the bottom sections can be removed.

2. Remove the bottom sections along with the O'Rings installed at the ends.

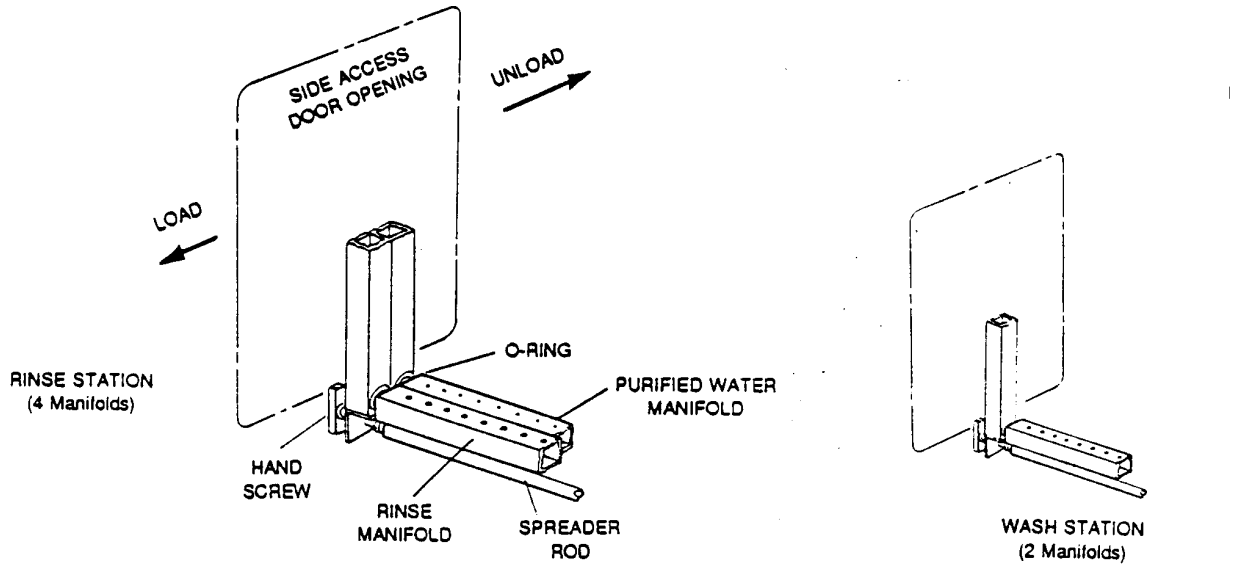


FIGURE 4-1: WASH-RINSE SPRAY MANIFOLDS

1. Clean any debris from the inside of the manifold sections.

2. Inspect the condition of the O'Rings. Replace if required.

3. Reassemble the manifold sections (NOTE: The Rinse and Purified Water Manifolds are not identical: the spray holes in the bottom section of a Purified Water Manifold are smaller. Be careful not to switch manifold sections during reassembly.)

CHECK SPRAY MANIFOLD SUPPLY HOSES

Check all the Spray Manifold Supply Hoses for heat cracks, cuts, or other evidence of deterioration. Replace if required.

FLUSH THE PREWASH SPRAY MANIFOLDS

1. Flush the two spin-type Spray Manifolds in the Prewash Station to remove any accumulation of debris.

2. Select either the top or bottom manifold and remove the screw and lock washer from each end.

3. Flush the interior of the manifold to remove loose debris.

4. Check the spray holes for any buildup of foreign matter that would restrict the rate of spray.

5. Repeat the procedure for the other manifold.

6. Reassemble both manifolds.

CHECK DETERGENT DISPENSER PUMP

Check the pump rollers on the Detergent Dispenser. Replace any components that show evidence of wear.

CHECK DISPENSER SUPPLY TUBES

Check the condition of the supply tubes on all Liquid Supply Dispensing Systems. Replace as required.

DESCALE WASH AND RINSE TANKS

The instructions below cover descaling the surfaces of the steam heating coils and the interior surfaces of the Wash and Rinse reservoir tanks. Descaling involves running a chemical descaler through the recirculating systems of both Stations. Contact your Getinge/Castle Service Technician for an appropriate scale remover - and follow directions for its use. The capacities for the Wash and Rinse reservoir tanks are 18 and 40 gallons (68 and 151 l) respectively.

1. Access the Supervisor Panel. Set selections as follows:

   LUBE PUMP to OFF.
   DET PUMP to OFF.
   PURE RINSE to OFF.
   SONIC BYPASS to ON.
   TEMP BYPASS to OFF.

   Exit the Panel.

2. Disconnect any optional enzyme supply tubing from Prewash water fill supply line.

3. Access the Drain Features sub-panel. Press the DRAIN ALL TANKS Push Button to drain the wash and rinse reservoir tanks. Then:

   - Set the WASH DRAIN COUNTS to a high number to ensure the wash tank will not drain automatically.

   - Set the PREWASH DRAIN COUNTS to "9" (max) so the tank will not be continuously drained and refilled during this descaling procedure.

Reset of the drain count for the Ultrasonic Station is not required because SONIC BYPASS is ON (Step 1).

   - Exit the Panel.

4. Apply open loops of tape over the upper and lower photoelectric sensors at the Load Station. Tape will simulate baskets, thereby allowing continuous cycles to be run without actual baskets.

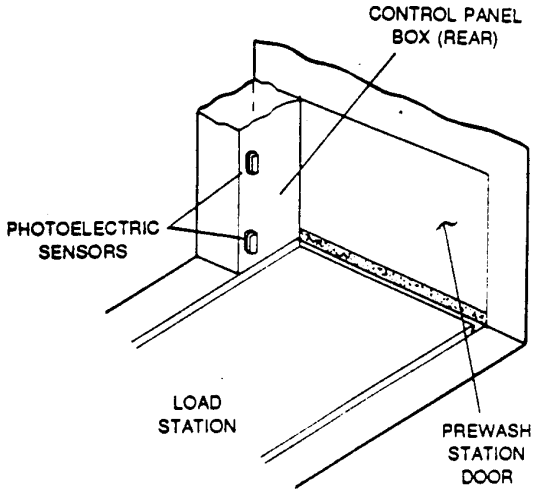


FIGURE 4-2: PHOTOELECTRIC SENSORS

5. Access the CYCLE REVIEW AND PROGRAM Panel.

   - Program the correct time and temperature settings for the Wash and Rinse descale treatments.
   - Program Prewash, Drying, and Exhaust for minimal times.
   - Programming Ultrasonic or Pure Rinse is not required.

Exit the Panel.

6. Press the START Push Button.

   - Allow the washer to index through processing three times. On the third index, a recirculated wash will occur.
   - Wait for this first wash to conclude, then turn the POWER ON/OFF Switch to OFF, then back to ON.

7. Remove the Side Access Doors to the Wash and Rinse Stations. Add the appropriate amount of descaler. (Descaler may be poured directly onto the drain screens located over the reservoir tanks.)

8. Replace the Side Access Doors.

9. Press the START Push Button.

   - The second wash and the first rinse treatment will begin. These are the descaling treatments for the wash and rinse reservoir tanks.

10. At the conclusion of these descaling treatments, turn the POWER ON/OFF switch to OFF. Then turn the Switch back to ON.

11. Access the Drain Features Panel. Press the DRAIN ALL TANKS Push Button to drain the wash and rinse reservoir tanks. Exit the Panel.

12. When draining has completed, press the START Push Button.

    - Reservoir tanks will refill with fresh water.
    - The washer will then run a fresh water flush through the wash and rinse systems for the same period of time that was set for the previous descaling treatments.

13. At the conclusion of this flushing treatment, turn the POWER ON/OFF switch to OFF. Then turn the Switch back to ON.

14. Repeat Steps 11 through 13 as many times as required to thoroughly flush out the descaling agent.

15. After flushing is complete:

    - Access the Drain Features sub-panel: Drain all tanks, then reset drain counts for routine operation.
    - Access the Supervisor Panel and reset component selections for routine operation.
    - Access the Cycle Review And Program Panel and reset time and temperature settings for routine operation.
    - Remove tape from photoelectric sensors and reassemble any optional enzyme supply tubing.

CHECK - REPLACE GUILLOTINE DOOR SEALS

To Check:

1. Press the OPEN DOORS Push Button on the MAIN Control Panel to open all the guillotine doors.
2. Inspect the condition of the under-door seals. If a seal displays heat cracks, tears, or other evidence of deterioration, replacement will be required.

To Replace:

1. Unfasten the Seal Assembly and lift it off of the index frame. The Assembly is secured with two hex head bolts and nuts.
2. Remove the old seal from the Assembly. It is secured with eight, slotted pan head screws.
3. Assemble the new seal.
4. Reassemble the new Seal Assembly to the index frame.

To Close Doors:

Press the CLOSE DOORS Push Button on the MAIN Control Panel.

LUBRICATE DOOR AND ELEVATOR AIR CYLINDER RODS

1. Depress the EMERGENCY STOP Button. (Air will be released from the pneumatic system.)
    - The Ultrasonic Elevator will lower, exposing the Elevator Air Cylinder Rod.
    - One Door Air Cylinder Rod is located in the Dry Compartment; the other is in the Ultrasonic Compartment.
2. Apply a thin film of lubricating oil (SAE #10 Motor Oil) to the surfaces of the rods.
3. After applying the lubricating oil, reset the EMERGENCY STOP Button. (Air will be resupplied to the cylinders.)

LUBRICATE THE INDEX AIR CYLINDER ROD

1. Remove the Cover Panel from the center of the Load Station to expose the Index Air Cylinder. The panel is secured with six slot head screws.
2. Press the OPEN DOORS Push Button on the MAIN Control panel to open all the guillotine doors.
3. Check to make sure the Ultrasonic Elevator is also in the raised position.

Performing the next step will require two (2) service personnel. One to operate the air solenoid, the other to apply the lubricant to the air cylinder rod.

4. Press the manual actuator button on the Index Air Solenoid. The Index Air Cylinder Rod will extend and remain extended as long as the button is held in the depressed position. [Air Solenoids (for Index, Door, and Elevator) are located on top of the Washer, over the Ultrasonic Station.]
5. Apply a thin film of lubricating oil (SAE #10 Motor Oil) to the surface of the extended rod.
6. Release the manual actuator button on the Index Air Solenoid to retract the rod.
7. Press the CLOSE DOORS Push Button on the MAIN Control Panel. Then exit the Panel.
8. Replace the cover panel over the Index Air Cylinder.

CHECK MOTORIZED DRAIN VALVES

Motorized Drain Valves are located on the Prewash, Ultrasonic, Wash, and Rinse tanks.

1. Turn the POWER ON/OFF Switch to ON. Wait for the tanks to fill.
2. After fill is complete, listen to each of the valves for the sound of water leaking. Such a condition would indicate that a valve is not closing properly.
    - If there is no sound, this check is complete.

- If the sound of leaking water can be heard, then the valve will have to be dismantled and cleaned. Lubricating the motor/valve stem will also be required.

3. Access the Drain Features Panel and press the DRAIN ALL TANKS Push Button. Then exit the Panel.

4. After draining, turn the POWER ON/OFF Switch to OFF.

CHECK DISPENSER FLOW RATES

All liquid supply injectors and pumps should be checked on a monthly basis to ensure they are dispensing the correct amounts. Checking would involve:

- Substituting a graduated container of a liquid supply if that supply is not already held in such.

- Turning the POWER ON/OFF Switch to ON and checking Ultrasonic detergent and Prewash Enzyme (Option) flow rates that occur during the filling of the tanks.

    1. Access the Drain Features Panel and press the DRAIN PREWASH TANK and the DRAIN ULTRASONIC TANK Push Buttons.

    2. After draining, turn the POWER ON/OFF Switch to OFF, then back to ON. Both tanks will refill.

- Running a processing cycle and checking the Wash Detergent and Lubricant flow rates that occur during the Wash and Pure Rinse treatments.

    Access the Drain Features Panel and press the DRAIN WASH TANK Push Button before starting the cycle. Deter-gent will be pumped into the wash tank when the wash pump starts.

Adjustments will have to be made to those liquid supply dispensers that are not delivering correct amounts.

CHECK CIRCULATING PUMPS

This check applies to the Purified Water (Pure Rinse) pump also.

Check for evidence of leakage around the Prewash, Wash, Rinse, and Pure Rinse pumps.

If leakage is evident, replacement of pump seals will be required.

EVERY 6 MONTHS

CHECK-CLEAN STEAM TRAP(S)

Check steam trap(s), and clean if required.

CHECK-CLEAN ALL Y-STRAINERS

Check the filter screens in all plumbing supply lines. Clean if required.

CLEAN ULTRASONIC GENERATORS

Clean louvers, fan blades, and transistor heat sink. Insufficient air flow may result in damaged transistors due to overheating.

CHECK MANIFOLD AND INDEX FRAME ROLLERS

Inspect various rollers such as manifold, manifold drive, and index frame rollers for excessive wear or play.

CHECK MOTORIZED DAMPER

Observe the operation of the motorized damper at the start of Exhaust. Adjust if required. Lubricate the arm of the motor with a light weight oil.

CHECK DRYER BLOWER

Check the dryer blower for excessive vibration or noise. Lubricate as required.

ANNUALLY

CHECK DOOR LIFT COMPONENTS

Inspect interior door lift arms, all pivot points, and lift arm shaft bearing for excessive wear. Replace as required.

CHECK SPINNING MANIFOLD BEARINGS

Inspect the bearings in the spinning manifolds located in the Prewash Station. Manifolds should spin freely.

AS REQUIRED

REPLACE PRINTER/RECORDER PAPER ROLL

Refer to Appendix B: Recorder/Printer.

APPENDIX A: LIQUID SUPPLY DISPENSING SYSTEMS

This Appendix provides detailed descriptions of the various systems used to dispense the liquid supplies required for the Wash and Pure Rinse treatments. Included also is the Enzyme dispensing system that may be applied to the Prewash treatment as an option.

GENERAL INFORMATION

The initial setting up of a dispensing system so that it will deliver the correct amount of a liquid supply, along with any adjustments made to the system over the course of routine Washer operation, should be performed by qualified service personnel only.

Machine operators should always make certain that a sufficient amount of a liquid supply is available to support a processing treatment during routine operation, and that all the dispensers' supply tubes are properly inserted into their respective liquid supply containers.

WASH DETERGENT DISPENSING SYSTEM

In this system, liquid detergent is pumped directly into the Wash station's reservoir tank after the tank has been filled with a fresh supply of water. Specifically, this occurs at the start of the first timed Wash treatment that follows the fresh fill.

Setup instructions are printed on the inside of the Dispenser's front cover.

Reference: The capacity of the Wash reservoir tank is 18 gallons (68 l). Detergent concentration should be 1/4 to 1/2 fl oz per gal - depending on water hardness.

POWER Indicator
Red light that comes on when electrical power is supplied to the Dispenser.

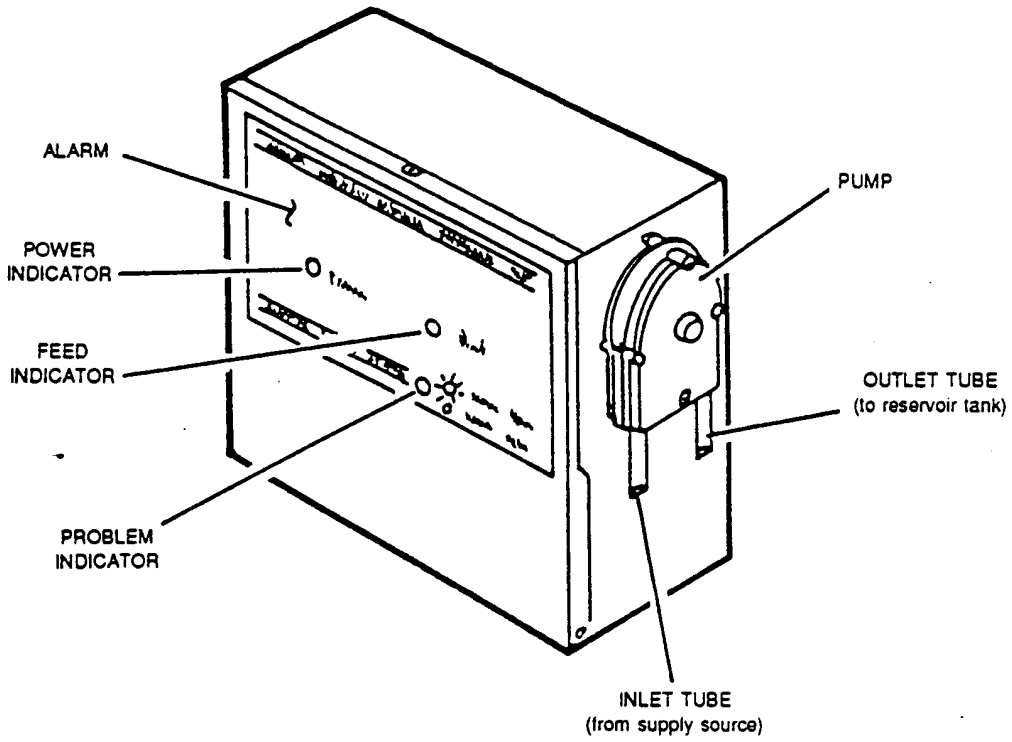


FIGURE A-1: WASH DETERGENT DISPENSING SYSTEM

FEED Indicator
Red light that comes on when the Dispenser is pumping detergent to the reservoir.

Problem Indicator
Red light that flashes intermittently when a low concentration of detergent is detected. Displays a steady light when a problem with the Dispenser system is detected.

Alarm
Sounds an audible pulsing signal when a low concentration of detergent is detected. Sounds a steady signal when a problem with the Dispenser system is detected.

Pump
Draws detergent from the supply source and feeds it to the reservoir.

Inlet Tube
Carries detergent from the supply source to the pump.

Outlet Tube
Carries detergent from the pump to the Wash reservoir tank.

LUBRICANT DISPENSING SYSTEM

In this system, lubricant is pumped directly into the supply line (intake) of the purified water pump. The water-lubricant mixture is then discharged to the spray manifolds located in the Rinse station, during the Pure Rinse treatment.

Reference: The maximum capacity of the lubricant pump is approximately 2.7 fl oz per minute. The purified water source is the Pure Rinse reservoir tank [Capacity: 25 gal (95 l)].

Pump
Draws lubricant from the supply container and discharges it into the purified water line for the duration of a timed PureRinse spray treatment.

Capacity Control Knob
Sets the amount of lubricant that is discharged (as a percent of the stroke that displaces a diaphragm within the pump head). At maximum capacity, or 100 percent stroke, the lubricant will be discharged at an approximate rate of 2.7 fl oz per minute. Lesser settings will result in reduced flow rates.

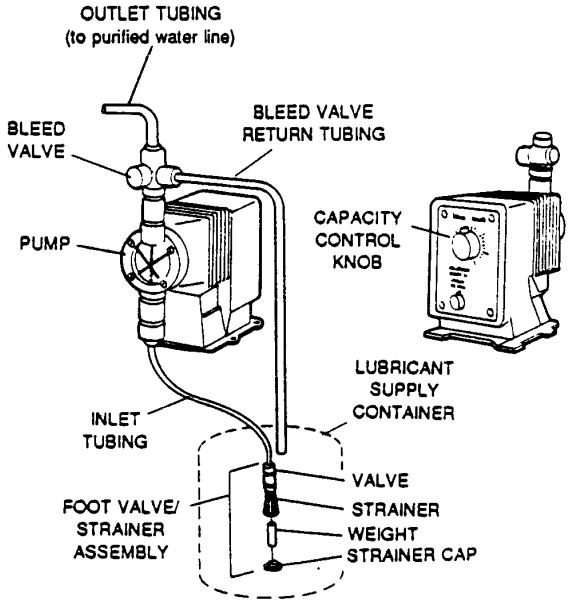


FIGURE A-2: LUBRICANT DISPENSING SYSTEM

Outlet Tubing
Carries the lubricant from the pump to the purified water line.

Inlet Tubing
Carries the lubricant from the supply source to the pump.

Foot Valve/Strainer Assembly
Point of intake where the lubricant is drawn into the dispensing system.

Valve: Prevents the backflow of lubricant from the Inlet Tubing during periods when the pump is not operating.

Strainer: Filters the lubricant before it enters the system.

Weight: Prevents the Assembly from floating.

Strainer Cap: Permits access to the inside of the Strainer. The Cap can be easily pried off by hand.

NOTE

The entire body of the Strainer must remain immersed within the lubricant supply during pump operation. If any portion of the Strainer is exposed, air will be drawn into the dispensing system. The air will then have to be purged from the system before it will function correctly.

Bleed Valve
Primes the pump. Turning the adjustment knob counterclockwise to stop closes the pump's outlet line and opens the Bleed Valve Return line. Energizing the pump will then purge air bubbles from the inlet tubing and pump head.

Bleed Valve Return Tubing
Routes lubricant and air back to the supply container when the Bleed Valve is utilized to purge the system or prime the pump.

ULTRASONIC DETERGENT DISPENSING SYSTEM

In this system, detergent is injected into the water line that supplies the Ultrasonic station's immersion tank every time the tank is filled with a fresh supply of water. In effect, it is the flowing pressure of that water line (PSI) that draws the liquid detergent out through the system's injector (or metering valve).

The correct amount of detergent required depends on the capacity of the immersion tank, the type of soil to be removed, and the grain hardness of the water supply. Once that amount is known, correctly adjusting the injector so the required amount is automatically dispensed will depend on the pressure of the water supply line.

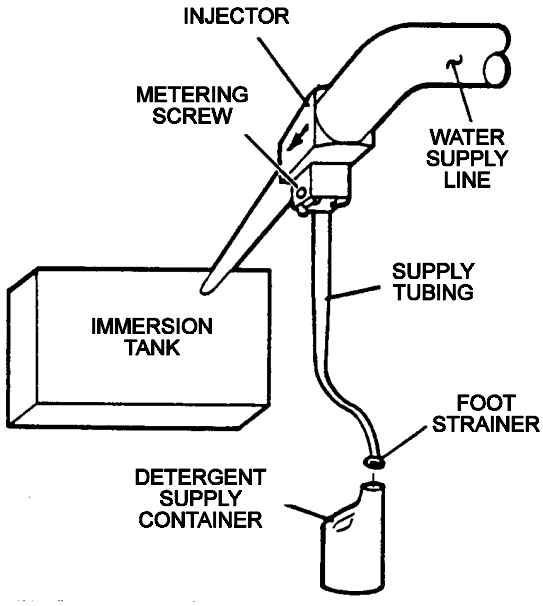


FIGURE A-3: ULTRASONIC DETERGENT DISPENSING SYSTEM
(Option)

Turning the injector's metering screw clockwise until it stops will close the valve. Five complete counterclockwise turns (from stop) will fully open the valve. 2-1/2 counterclockwise turns will open the valve half way.

Reference: Immersion tank capacity is 30 gallons (114 l). Water pressure, soil type, and grain hardness will vary with each operational site.

ENZYME DISPENSING SYSTEM (OPTION)

In this system, enzyme solution is injected into the water line that supplies the Prewash station's reservoir tank every time the tank is filled with a fresh supply of water.

The configuration and operation of this system is identical to that of the Ultrasonic Detergent Dispensing System described previously (See Figure A-3).

The proper amount of enzyme solution to be dispensed into the reservoir tank must be obtained from the enzyme's manufacturer. Once known, correctly adjusting the injector to deliver that amount will depend on the pressure of the water supply line.

Reference: The capacity of the Prewash reservoir tank is 18 gallons (68 l).

APPENDIX B: RECORDER/PRINTER

The optional Recorder/Printer provides a record of pertinent cycle data for each processing cycle run on the Washer. Pertinent data includes cycle identification, programmed phase setpoints, phase performance, date, and time.

The Recorder/Printer is equipped with a thermal array printhead that is capable of printing at a paper feed rate of 1.3 inches per second. Use of this type of printhead eliminates the need for print ribbon cartridges.

DESCRIPTION

(Ref: Figure B-1)

FEED-ON-OFF Switch
Turns the Recorder/Printer On and OFF. Rapidly advances the paper through the Recorder/ Printer when held in the FEED position.

STATUS Indicator
Lights green when the Recorder/Printer is turned ON. Lights green/yellow when the paper roll supply is low. Lightsyellow when the paper roll supply has run out.

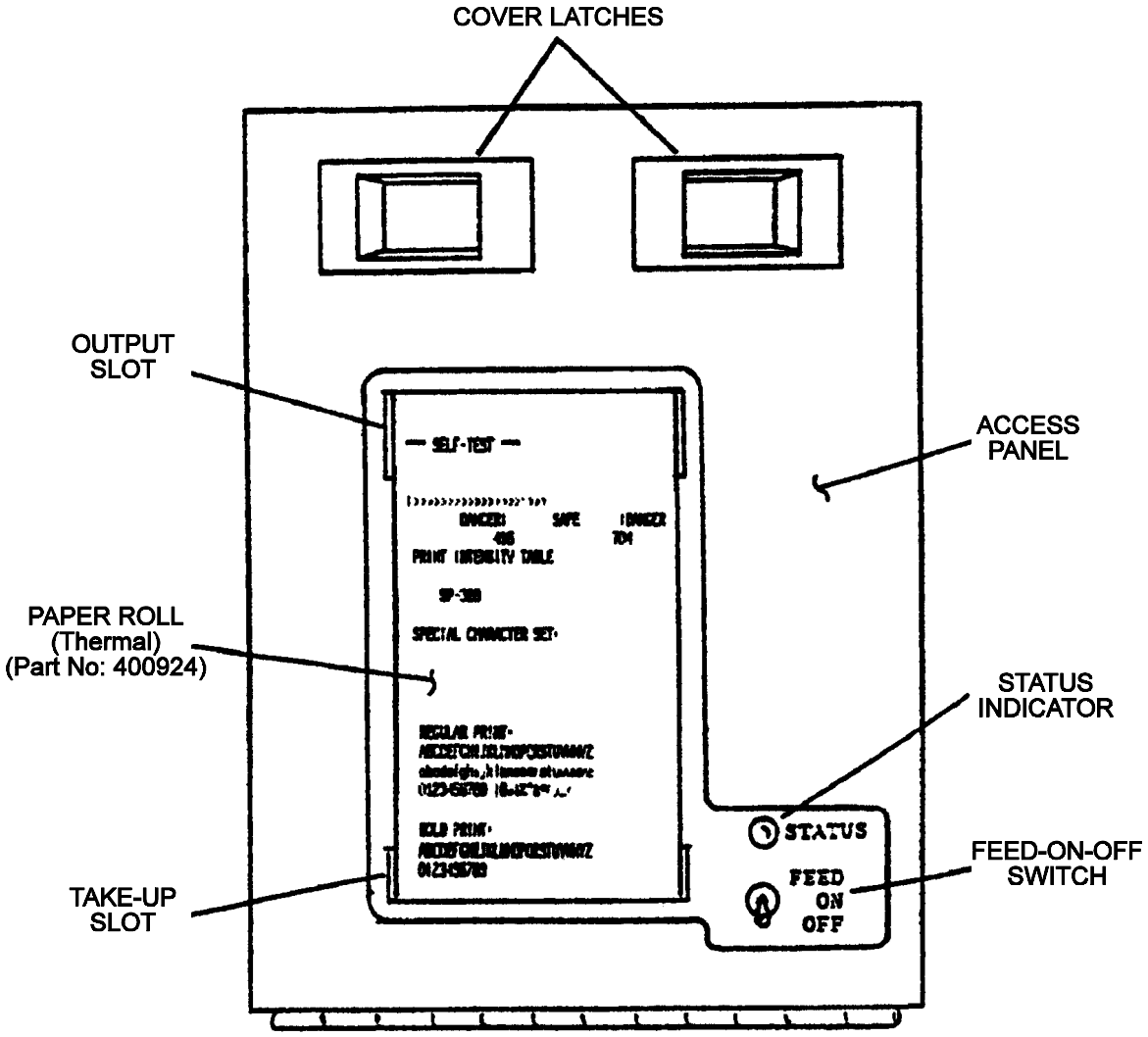


FIGURE B-1: RECORDER/PRINTER

Paper Roll (Thermal)
Carries the printed record of cycle data. One roll is 100 feet long by 2.35 inches wide. (Part No: 400924)

Output Slot
Issues the paper after it has passed through the printer.

Input Slot
Channels the paper to the printer's take-up roll.

Access Panel
Permits access to the printer. Panel is latched at the top and hinged at the bottom.

Cover Latches
Secure the Access Panel to its mounting frame. Pushing the spring-loaded latches toward each other releases the Panel for access to the printer.

PAPER ROLL LOADING

(Ref: Figure B-2)

1. Switch the FEED-ON-OFF Switch to ON.
2. Push the spring-loaded Cover Latches inward to release the Access Cover for access to the printer.
3. Install a new paper roll (thermal side up) on the paper roll Spindle.
4. Fold the end of the paper back on itself to form a straight and clean edge.

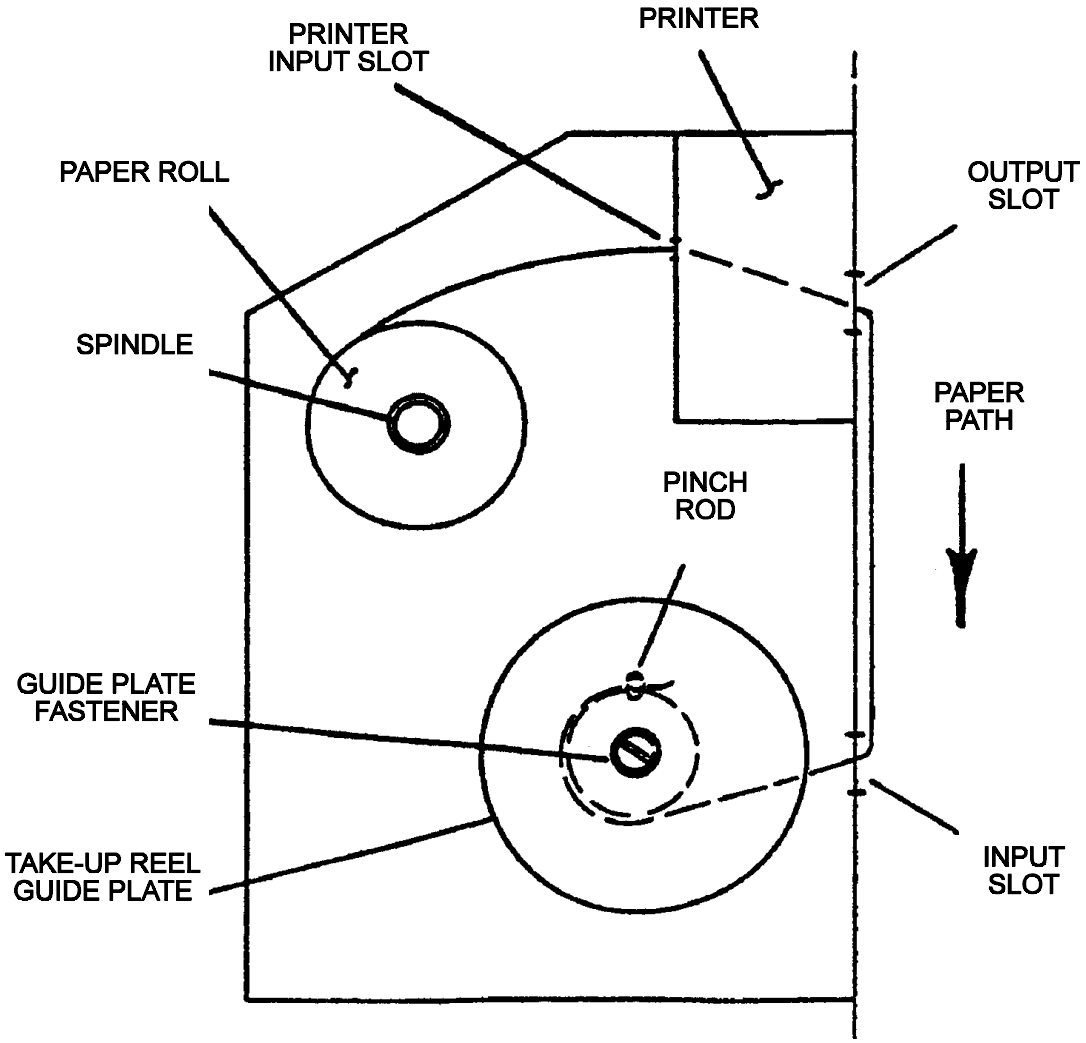


FIGURE B-2: PAPER ROLL LOADING

5. Insert the end of the paper into the Printer Input Slot.

    - The printer will automatically feed the end of the paper through the printhead mechanism.

    - Automatic feed will stop after an inch or so of paper has been issued through the Output Slot.

    - Turn the FEED-ON-OFF Switch to the FEED position and hold until approximately 12 inches of paper has been discharged from the Output Slot.

6. Unscrew the Guide Plate from the Take-Up Reel.

7. Run the end of the paper through the access cover's Input Slot and wrap it around the Take-Up Reel.

8. The paper must cover the pinch rod slot on the surface of the Reel.

9. Reassemble the Guide Plate onto the Take-Up Reel, aligning the pinch rod with the pinch rod slot so that it captures the paper and holds it securely to the Reel.

10. After reassembly, manually rotate the Reel clockwise to take up any slack in the paper.

11. Close the Access Cover.

OPERATION

Operation of the Recorder/Printer is automatic and does not require the attention of personnel other than for routine replacement of the paper roll.

- Do not operate the printer without paper.

- The final few feet of a paper roll are shaded (red) to indicate the supply is running out. The roll should be replaced when this shading appears.

- To initiate a diagnostic self-test, switch the FEED-ON-OFF Switch to OFF. Then switch it back <u>through</u> the ON position to the FEED position and hold it there for a second or two - then release the switch.

- To feed paper through the printer without initiating a self-test, switch the FEED-ON-OFF Switch from the ON position to the FEED postion and hold. When desired, release the switch to stop paper feed. Do not switch from the OFF position straight to the FEED position, or a self-test will occur.

- Should the paper roll run out, the Status Indicator will display a yellow light and the printer will sound an intermittent alert.

- Install a new paper roll. <u>Do not operate the printer without paper. If replacement paper rolls are not available, turn OFF the printer</u>.

NOTES

APPENDIX C: SUPERVISOR PANEL

Information carried in this Appendix is intended for supervisory personnel only.

The Supervisor sub-panel enables the user to:

1. Turn off the Ultrasonic Station treatment
2. Turn off the Pure Rinse treatment.
3. Turn off the steam heat systems.
4. Turn off the detergent and/or lubricant pumps.
5. Open the guillotine doors.
6. Protect cycle parameters.
7. Select degrees-F or degrees-C for display.
8. Change the password for the Supervisor sub-panel.
9. Program time and date.

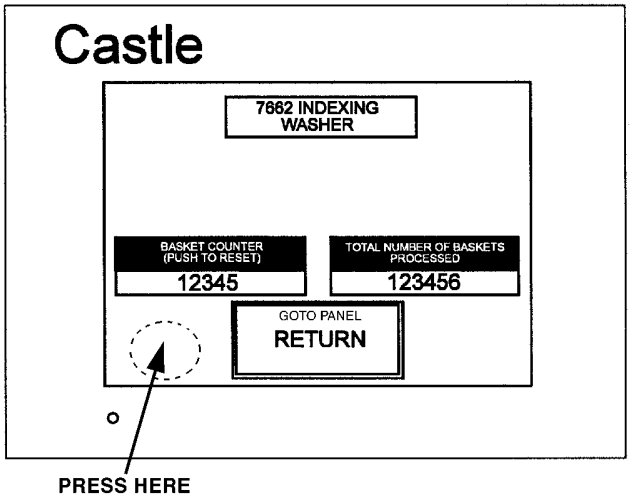
Access to the Supervisor sub-panel requires the keypad entry of a numerical password. The factory setting for this password is "2468". After washer installation, this password may be changed by the user to ensure limited access to the sub-panel.

CAUTION

Be careful to prevent unauthorized access to the Supervisor sub-panel. However, should the user elect to change the factory-set password, be sure the new password is made available to your local Getinge/Castle product Support Representative.

To Change The FactorySet Password:

1. Press the SYSTEM ADJUST GoTo Panel on the MAIN Control Panel.
   - The System Adjust sub-panel will be displayed.



2. Press the blank space in the lower left hand corner of the sub-panel.
   - Password Entry Keypad for access to the Supervisor sub-panel will appear.

3. Enter the factory-set password (2468) at the Keypad. Then press the ENTER Key, followed by the DONE Key.
   - The Supervisor sub-panel will be displayed.

4. Press the SUPERVISOR PASSWORD Key.
   - A SUPERVISOR PASSWORD Entry Keypad will be displayed.

5. Enter the new numeric password on the Keypad. The program will accept any number from 1 to 32000.
   - The new number will appear above the Keypad.

6. Check the number to be sure it is correct. Use the Keypad to change it if it is not correct.

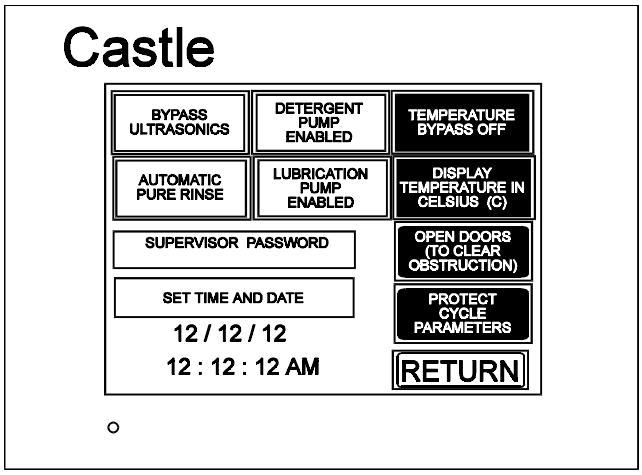
7. If number is correct, press the ENTER Key.
   - The new number will appear in the CURRENT VALUE space.

8. Press the DONE Key.
   - The new password is now in effect.
   - The Supervisor sub-panel will reappear.

When ready, press RETURN to exit the sub-panel.

Using The Supervisor Sub-Panel:

The Supervisor sub-panel provides the user with eight Push Buttons, two GoTo Panels and one Key. (Refer to Steps 1, 2, and 3 in the previous section for accessing the sub-panel.)



SUPERVISOR PASSWORD Key
Pressing this Key will display a Password Entry Keypad that is used for changing the password. The current numerical password will appear in the Keypad's CURRENT VALUE space.

NOTE

Should any of the following five functions/components be turned OFF, notification will be displayed on both the MAIN Panel and the Processing Cycle Screen.

BYPASS ULTRASONICS Push Button
Shuts off (when pressed) the Ultrasonic treatment. Button will display an ULTRASONIC NOT AVAILABLE message (Also, the lubrication pump will be disabled - LUBRICATION PUMP ENABLED Push Button will change to LUBRICATION PUMP DISABLED.) All racks will be handled as Utensil Racks, receiving no ultrasonic or lubrication treatments. All other stations will continue to function.

DETERGENT PUMP ENABLED Push Button
Shuts off (when pressed) the Wash Detergent Dispensing System to the detergent water reservoir tank. Button will display a DETERGENT PUMP DISABLED message. Does not discontinue Wash Station processing treatments.

TEMPERATURE BYPASS OFF Push Button
Shuts off (when pressed) the steam heating systems to the Wash, Rinse, Pure Rinse, and Dry Stations. Button will display a TEMPERATURE BYPASS ON message. Stations will continue to function at non-heated temperatures.

AUTOMATIC PURE RINSE Push Button
Shuts down (when pressed) the Pure Rinse processing treatment (including lubrication). Button will display a BYPASS PURE RINSE message. (Lubrication pump will also be turned off - LUBRICATION PUMP ENABLED Push Button will change to LUBRICATION PUMP DISABLED.).

LUBRICATION PUMP ENABLED Push Button
Shuts off (when pressed) the Lubricant Dispensing System to the Pure Rinse supply line. Button will display a LUBRICATION PUMP DISABLED message.

OPEN DOORS (TO CLEAR OBSTRUCTION) Push Button
Raises (when pressed) the guillotine doors. Button will then display a DOORS ARE OPENED message. When desired, pressing this Button again will close the doors.

SET TIME AND DATE GoTo Panel (Recorder/Printer Option only)
Displays (when pressed) a Set Time And Date sub-panel that enables the supervisor to change the time or the date that appears on a print-out. This GoTo Panel will not be displayed on units that are not equipped with the optional Recorder/Printer. (Current time and date will be displayed directly above the GoTo Panel.)

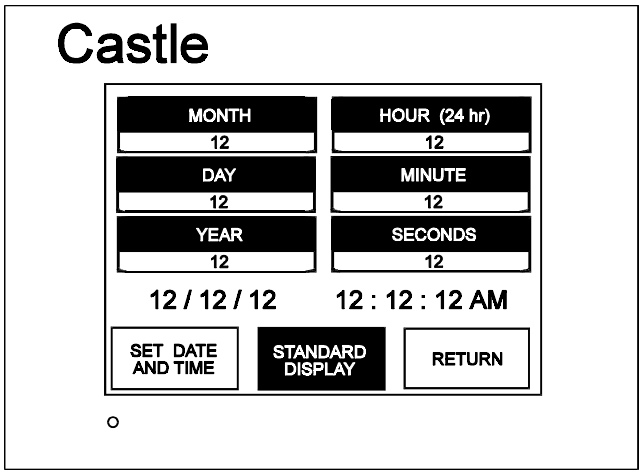
PROTECT CYCLE PARAMETERS Push Button
Protects (when pressed) the time and temperature values set at the Cycle Review And Program sub-panel.

DISPLAY TEMPERATURE IN CELSIUS (C) push Button
Changes (when pressed) the displays of degrees -F to degrees C.

RETURN GoTo Panel
Exits (when pressed) the sub-panel.

Using the SET TIME AND DATE Sub-Panel

This GoTo Panel is only available on units equipped with an optional Recorder/Printer.



Pressing the SET TIME AND DATE GoTo Panel at the Supervisor sub-panel will display a Set Time And Date sub-panel. This sub-panel provides the supervisor with three date Data Keys, three time Data Keys, and two Push Buttons. It also displays the current date and time setting.

Use the MONTH, DAY, and/or YEAR Data Keys to change the date. The current value for each will be displayed on the face of the Key. To change a-value, press the Data Key for access to its Data Entry Keypad.

Use the HOUR (24 hr), the MINUTE, and /or the SECONDS Data Keys to change the time. The current value for each will be displayed on the face of the Key. To change a value, press the Data Key for access to its Data Entry Keypad.

SET DATE AND TIME Push Button

Saves (when pressed) any changes made to the date and/or time and exits the sub-panel, returning the operator to the System Adjust sub-panel. If no changes were made, pressing this Button will exit the sub-panel, leaving date/time values unaffected.

STANDARD DISPLAY Push Button

Changes (when pressed) the HOURLY values from a 12-hour standard to a 24-hour military style display.

RETURN Push Button

Cancels (when pressed) any changes made to the date and/or time and exits the sub-panel, returning the operator to the System Adjust sub-panel. If no changes were made, pressing this Button will exit the sub-panel, leaving date/time values unaffected.

NOTES

Getinge/Castle, Inc.
1777 East Henrietta Road
Telephone (800) 950–9912 **Rochester, New York 14623–3133 USA** **Facsimile (800) 950–2570**